Rec'd Jan 15th
Ans Feb 16

Bluffton Mo
12 Jan '72

Dr
L. J. Engelmann

My dear Sir

As the Early blooming
of the "Pinus Elliottii" seems a
peculiar feature, I've thought
it best to send it on, so,
that you might observe its
first stages. You will see
that it is already very well
advanced, — & this in the mid-
dle of Jan only! P. Australis
wh I've left you some weeks
in order, but had
only commenced to push! I
therefore collected today 2 or 3
specs of P. E — & the package
is already on its way. It con-
tained also in addition to
last invoice of seed of P. Ell —
& P. glabra, (did you get a package
of latter sent in letter before I left
here for up-country?) also spec.
my letter — great mi

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

of Opuntia Percurva from the Sand Hills
of Hilton Head. We call it here as
I told you "Pin Pillow". [An old
negro has just sent us from Dawf=
=fuskie Island the most magnificent
(I use the phrase advisedly & not with
American Exaggeration!) — bunches
of Japonicas, — all double & varying
colored, & some of them of great
size, — I shd like you to see
them! They grew of course in the
open air, — the isld is about 10
miles from here, & bounding the
sea — is still milder perhaps
than Epm this place. Many jonquils
also came, — the room now being
redolent with their fragrance!
I suppose you will have to get
into your hot houses for this
kind of thing, — but we have bitter
weather here nevertheless, at
times, to the great astonishment of
shivering Northerners, who look out
for the Palms of Araby the Blest
when they come South!] I have
planted several of the Pin-Pillows
& hope to see them bloom this Sp.
You will find also in the
packages a last Spec. leaf

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

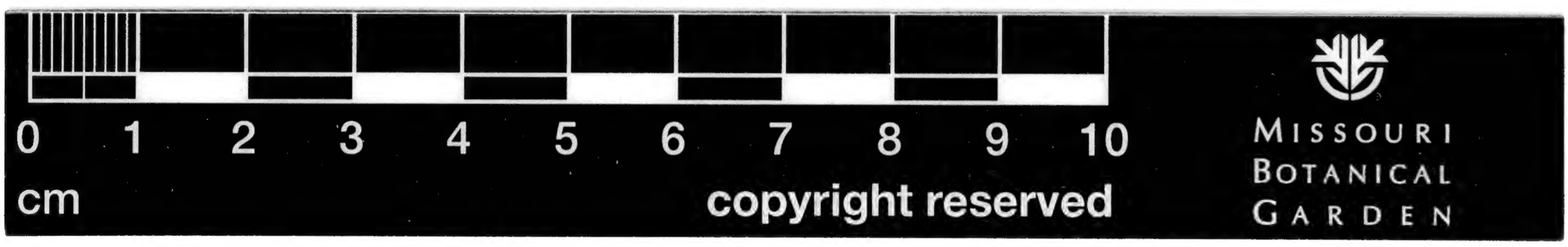
of Y. Sloricea, — this being the first unadul-
-terated article from Paris Isld, — Port Royal -
On next day going to Beaufort I was
caught in a dense fog while crossing
Broad River, (a pretty bad place!) & after
rowing seemingly for hours we at last struck
a ragged Isld coming up Through the
mists & fog banks; — not knowing where
we were, we went up "for to see" &
inquire of Cuffees. It proved to be Paris
Isld, wh I had not visited since my
early boyhood! — We stopped but for
one minute, but during that time
I observed some half dozen of Y. Flor.
They were similar to those I had
observed here, — none of them had
bloomed & no fruit. They were growing
in the drifting sands along the
inlets beach. Those upon the country
were taller generally than the few
Examined here, & were much dispersed
to branch or forks. The same here; —
& also with D. racemis. I have to
thank you for yr letter of 18 Nov
containing such to me interesting notes
of the Mel. Cactus. No fruit had on
or the wool of my sheep, & the central
spine is turned upward. I shall watch
it with int & doubtless will be able
to send you fls of the same. I still
hope to get fruit of Y. flor. from Hilton
Head. When I was away I was called
to the very place (or rather visit near)
by such heavy rains So that I thus

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

just missed Examining the plants wh formerly grew there. Recd also yr last of 23 Dec — thanks again! Glad the package arrived safely as I was especially anxious yr shd see those remarkable sheets of Y. filamentosa YYYas! You desire me to be "candid" as to my having "picked out" those leaves! Well! I did indeed "pick" out what seemed the largest & best & most luxuriant, — but I can assure you that there was but little difference in the size & appearance of most that I saw. There were some 15 or 20 plants, a clusters of plants altogether, & with few exceptions they ~~all~~ corresponded closely with what I sent, — tho' I did "pick" ~~from~~ 3 leaves from one plant wh. had peculiarly broad & shorter leaves. The others however sent wh were longer & rather sharper pointed & narrower came from another plant close by, & these I regard as simply a good specimen of the Y. fil. as I saw it in Orangeburg ~~Dist~~ County. The broad leaves of Y. f are ~~so~~ broader, & more obtuse, & invariably shorter, — the younger are narrower & sharper pointed & longer. Those sent mostly came from the second & third tier, — the broader perhaps from first. No! what I sent represents what I saw with but little or no exaggeration! I remarked that these plants clustered more than Y. f down here. I saw no "thick scaly shoots in the Carpinus plant". The day before I left F. Motte my father met with a small farmer from the sand "hill country" (one Brandenburg by-the-by if you take an int. in Yankee names — tho' I believe they mostly call him "Brandy-burg."!) who informed him that there were without doubt about him two distinctly marked varieties of Y. fil. Doubtless the one such as I sent you, — and another perhaps narrower like Dr Hunter's. My Father will keep his eye on the said Farmer, who (so F. says) spoke knowingly & with intelligence in this matter.

Remember me



Rec'd April 20th

Ans May 15 — Bluffton Ohio

13 Apl. '72

Dr. J. G. Engelmann

My Dr Sir:

As you see I have long

delayed answering yr last of 13 Feb

& for the best of reasons! — I had

nothing to send & still lack opportunity

to write you! My fellowman how-

-ever or James Gelt whom I had

long since anathematized for his

seeming neglect of promises made

— has just written me, — Enclosing

flowers & Capsules of the "Stiles Point"

Y. filamentous wh corresponded you

may remember with that sent

from the region of the Cimarron (Dr. Wolle).

. He says that with him it blooms

"latter part of April" (— my earliest

here last year (yf no 1.) blooming

middle of may! I enclose two

flowers & Capsules sent, — the petals

of the former seem to be more narrow

than the other varieties, but resembling my ♀ of No 1 in the equal lengths of the filaments & anthers with the gray stigma. The Capsules seem very differ-
-ent from any heretofore Examined-
in being much smaller, & in having much longer re-curved claws (?) at the Apex! Possibly however these were plucked when only half ripe, — wh indeed is most likely! — As for M. floridana! no fruit yet I expect to day! — a sort of phantom or will o'the wisp of the Sand Hills — wh still eludes my careful search! He says that in October 3 or 4 plants were observed in bloom, — the first ~~fruit~~ being that very vigorous plant from the little sandy beach fronting Charleston, of wh I formerly wrote you as having a gigantic flower stalk full 6 feet high. This was mutilated by some animal — most probably some wandering gorilla or Chimpanzee, — and therefore no fruit! The other plants flowered on the other side of the Island, but the flowers without & mate no sign & so in this case also — no fruit! ——

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

I enclose leaf & 2 flowers of the James Isle specimen sent me for you to compare with mine also of last fall. Could I take a day on Hilton Head beach I doubt not I could soon satisfy you & myself also. I did get over there last week to see a few curious almost insects — [redacted] — but in exact pairs & clusters to say nothing of my professional engagements prevented me from walking the 3 miles across the isle to get to the beach. The few plants I observed had not bloomed last fall. ——————

I shall send by this mail another batch of yucca flowers which I came across the other day while overhauling certain collections of last year. Perhaps it is best that you should have them, tho' I doubt not you can now cry "Enough". I am glad that you are satisfied as to the real basis of the Y. Constricta, but I conclude you have not yet been able to find my "Concentric rings" which seemed pretty well marked when the tree was first cut — at any rate there was my great mistake in the fibre. ——————

The Spring || has at last come — even bringing the "Whip Poor Will" the last few nights — but we are almost

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

a month behind hand compared with last year, — indeed I do not remember to have had experience a winter of such steady & persistent cold. I watched to compare the blooming of the Pines; & as before found Pinus Elliottii from 3 weeks to a full month a-head of the others. On the 25th of Feb. I observed one tree wh was discharging its pollen, & by 1. Mch & a little after all seemingly had written. This did not occur with P. Australis & until about 1. April &c. Mr Ravenel having requested me to get for Prof Gray certain seeds & plants to be found only on the sea-board I took the liberty of sending him flowering specimens &c of Pinus Elliottii, simply labelling it & referring him to yrself & Mr B—

Yours respectfully

F. A. Meschamps

P.S—

Better look narrowly at the Y[ou]g. from "Stiles' Point" because it is possible that these flowers may have been incorrectly labelled by my friends. I have re-labelled them, — but just as they came.

F. A. M.

copied

A good many of my P. glabra seeds came up, never over 6 cotyledon leaves — that seems the maximum — one only had 4! P. Elliottii never has over 9 wh is usual in the vigorous germinating seeds — frequently 7 & 8 — sometimes 6 never under. No seeds of P. Australis last year (as I told you in the Spring) to examine cotyledon leaves but there will be thousands this Y[ea]r or next! Pourquoi?

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Need not send seed — my
mi[illegible]
is to inform.
Send S. Varolanis!

22 May '72

To —

W. J. Engelmann

Rec° May 28th
Ans Jun 21

My Dr Sir

I was glad to
see once again Rimm
to me familiar hand,
& especially so to find
that I last more criti-
cal examination of the
leaves sent to a certain
extent (at least for the
present) vindicates my
own opinion as to the
nature of differences in
my trees. (certainly this)
Some of Y. filamentosa!
I shall therefore still con-
-tinue to trust my Eyes
& my own conclusions of
form & colour &c until
corrected by fact botanical

I send a letter written by Dr Asa Gray to me, containing his views on the subject of our present—

Skall send 1 or 2 more in a day or two.

knowledge & the revelations of the Microscope! I am glad to find also that you are now disposed to acknowledge the "Seaweed" plant from the rice-field region as the same as my smooth-long leaved "Paniculata" — No 2, found about me in this immediate neighbourhood — Wh if I remember aright you were at first disinclined to doubt. But I had no doubts myself. Tho I did not see the plants growing — as I informed you. Lest in any way I should mislead you (a difficult matter tho' I opine!!) let me remind you that when you first wrote as to the various Yuccas about me I lectured on that I knew but one Y. filamentosa here & failed at first to find a single capsule or seed for you. When I peeled the capsule & seed (of No 2) from "Seaweed" I soon after found both No 2 & No 3 (Thinly in

different fields at "Hunting Gulch"
& labelled them "Salt water" at
first, simply to distinguish them
from that found near New River,
& this among the possibilities
that some of the seed from
just about me were mixed & the
I do not know it: the soil
which I sent I am pretty certain
came from No 1. & this corresponds
with what you say — I mark
found the patches of Nos 2 & 3
growing near each other — under
the plants & shelter
of these obs — probably only
No 2 — as I remember that
when found of No 3 were
mutilated & imperfect. If
may not until last Spring
('71) in matching the
first shooting out of No 1
& No 2 & No 3 that I sup-
posed them to be different —
with marked varieties & then it
was that I commenced to
number them accurately: If

GEORGE ENGELMANN PAPERS
MISSOURI BOTANICAL GARDEN
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

is only Therefore with a number (1. 2. 3) the two plants, seed, &c of Yucca. I that you can be sure of. Then premiss may be mixed. All this is rather long-winded but best for accuracy's sake! Anyway Kindly Lin (as you say) Canine Eng!" — Sed magis go

---

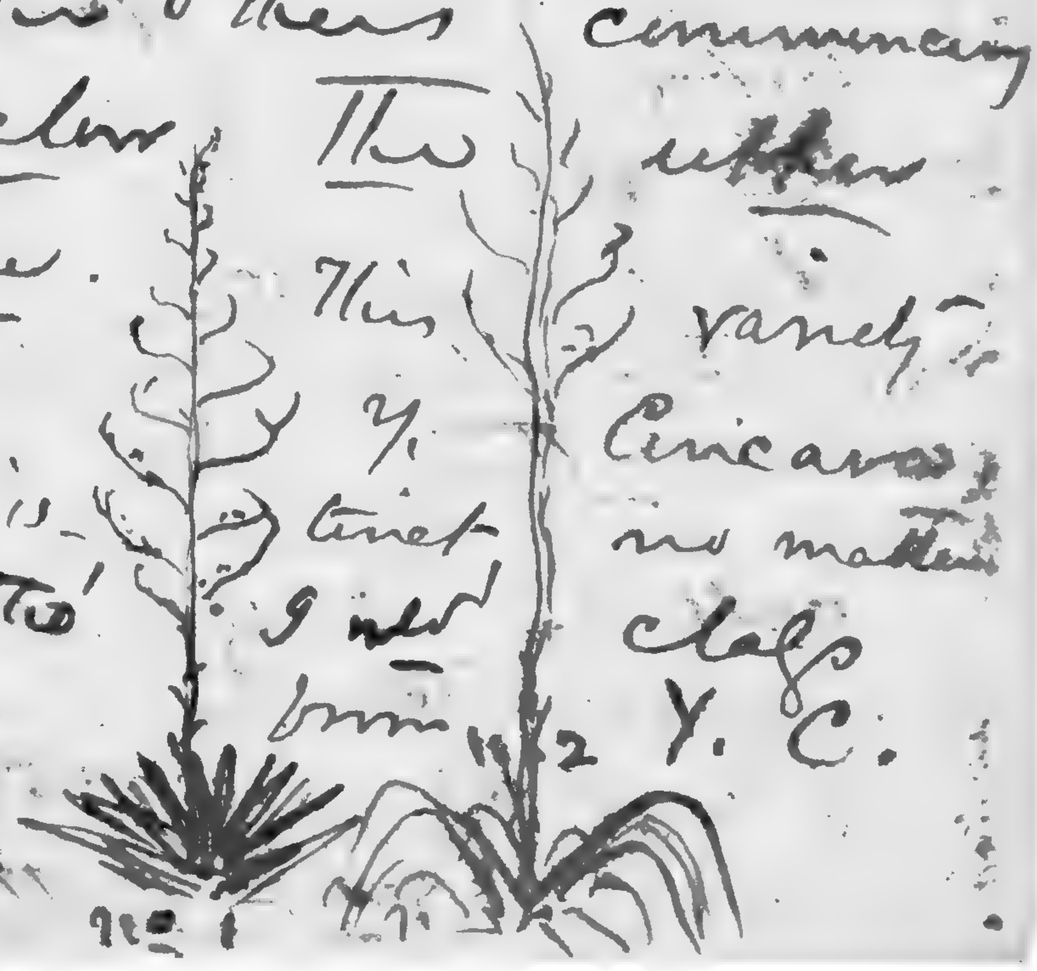
I am therefore pretty certain that you have seed of no 1 — The capsules were whiter & thinner & more papery if I mistake not. Last year not a capsule was to be found & only 3 or 4 flowering stalks. A few days since I [redacted] Examined a large patch of no 1 in one of the Hunting Creek fields where once before I designated them as "Nanny Creek Field" — The same wh was chopped up last spring ('71) by my distinguished friend Secretary — The Hon Caesar Green. The said Hon gentleman from Africa having totally failed in his little patch of Yucca last year, has now left my Yucca alone "to burgeon & to bloom" & that they are about doing in a manner unnatural

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

GEORGE ENGELMANN PAPERS

Aug 2 thru 28 1872 (2)

A beautiful to behold! I carried a branch thus a few days since; "ah! B." said he as he got a sight of it "there's your Asparagus patch"! The plants are very vigorous & much clustered like the broad leaved F. Mottle queen, & running up to the height of 6 ft & over 14 of them stiff flower stalks wh are very smooth & of the same pale-green colour as observed last spring at the other patches ½ mile & 2 or 3 miles N. no flowers of course ~~yet~~ hardly for 10 days yet but it will be a sight worth seeing when they are in full bloom. I for the panicle of this variety (as I told you) is much more compact (?) than the others commencing to branch from below the half of the scape. This variety may be the same as but it seems to me dis- what the seed say; no' it as next in order I have therefore flow promises Y. setting seeds



0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

capsules from these later in the summer.
I also visited another patch of No 1
at "Buck Hill" & observed the same con-
ditions. All the other clumps of Nos 2
& 3 have gone to sleep — under hard
almost drought, so I cannot tell that
I can get seed this year. You ask
about the Capsules of *No 3, I am
sure it was sent & correctly labelled.
But I feel less sure of No 3 (as being distinct) — yet the
leaves are generally thinner & smaller &
coarser & the stalks soft pinkish
invariably it seems to me. You ask
about transition varieties of No 1 & 2
I must confess I have occasionally
seen plants especially young ones
& growing in unfavourable situations wh
I failed to "spot" with certainty — way
doubtful somewhat where they belonged
whether to No 1, 2 or 3 — this — for the
truth's sake & yet I am pretty well
assured of the marked distinctions
& I often re-iterate to you "as
nauseam" I fear you will say !!!
I have 3 good specimens of 1, 2 & 3 collected
last year & by cutting off one half of
the leaves they are less bulky & I
shall send them thro' the mail no
matter how mutilated they be as your
seeing them will be better than any no
of letters from me but you will have to
call to imagination into play to re-
-generate them mittens & knocked things
I call to attention to the no of
leaves of No 1 & the panicle of No 2! Y.

* No 3 Capsule of No 2 has burst & seeds have escaped

Leo – lunch 1st (?) Yucca notes
Ans Jan 21 (1872) for 1875 – !!)

26. may '72.

Sunday morning! ∧ the day deliciously cool ∧ balmy after the drenching rains of last night! – Saw my only patient, ∧ thought I cld do no better than walk out to Hunting Hill ∧ take a look at my "as paragus Patch" of Yucca (concava?) bells seemed to me as No 1, growing in the "Nanny Creek field" – from which I failed to obtain flowers last year, the plants having been cut up by the hoe! ∧ perhaps thousands (saplings) of Pinus Elliottii, whose young cones of the spring from forming a month or so back little cones in miniature, are now all strongly recurved, ∧ as I enter the field – what was my surprise to find the flower-stalks of yucca No 1 ∧ had leafed at – a bound into bud & flowers! – The tender pea-green colour of the scape ∧ bracklets & buds contrasting beautifully with the half opened white bells of the flowers! Why so I cannot tell but that alliterative line of mine ancient friend Tennyson – (the friend of my youth!) came running into my brain ∧ held fast there, – "and many a mallcy-belled Amaryllis blew!" "Mallcy belled" in truth, ∧ a goodly sight too! – some 14 scapes all running up to within 6 ∧ 8 feet high from a little circle & cluster of smooth & soft but erect green leaves! When quite near ∧ about to examine the flowers – saw two oddings – more "Clishiles" not far off,



0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

& for the affected non-chalance & indifference with wh I strolled, thro' the cluster, — looking neither to the right nor left, but forward as if in a mood reflective — "meditating in rugs", — or straight a-head & without looking, & as if in pure recklessness twirling my stick & almost taking off the finest panicle there! —— I say for this I deserve not only the thanks of W.E — but his fervent praise & admiration! And why forsooth? Ah! my W.W.? had I stalked a shown admiration or curiosity — or lingered at the Charmed spot, those said sons of Cush, — (Coffee & Quacco by name we will say!) need most likely have returned to take their look too at what "de Buck-ra man was a — lookin' at", — & out of pure wantonness — not malice, — would have laid waste like a wired boars this garden of the Lord! Such things I have known not once nor twice only, this "man & brother" (and Miles too!) of mine to do! So having the fear before my eyes of no further examination of the plants, and no mature Capsules & seed of No 1 to send you, I stalked thro' the field into the one adjoining yclept of yore "Sagaretia field" — if you still keep ok with the Topography of this land of darkness & desolation! — Here too another surprise was in store for me, for here it is that No 2 (Paucifolia) & No 3 grow almost side by side, — two plants of the former shooting up their stalks of deep hue a claret colour from the centre of their long, smooth, sharp-spined feathered leaves, — but not yet branching — tho' 5 or 6 feet high, whilst almost touching them No 3 had also commenced to push to the height of 6 & 12 inches a goodly number of his shafts, — not pale & tender like buds of asparagus as in No 1, nor soft & purple as in No 2 but "fenx" as we used to say at school, for even thus early the sharp obliquely pointing scape leaves seemed to fence about & protect the young buds.

MISSOURI BOTANICAL GARDEN
copyright reserved
cm 0 1 2 3 4 5 6 7 8 9 10
MISSOURI BOTANICAL GARDEN

Rec'd Jun 4
Ans — 21

Mystic —

31. May —

As I am about to send by this mail
№ 2 & 3 of last y^r — I think it best to send
a note explaining y^r, & that № 1 was sent
some days ago, & to fill up the letter sent
also a few random notes of my walk
last Sunday — Something of a mixture & formal
like the prescriptions of Some Doctors! Will
keep my eye on these things during the

Summer, & Esther send a note of
any thing interesting turns up.
The damp-pine lands have been radiant
with Calopogon Pulchellus & Lattus
with Heloniums & my favourite Polygala
Diviricata with Gentians not yet
with you, shall I send one?
Answered often as fashion pours of
a/s 26 sum 10 Forsine!

GEORGE ENGELMANN PAPER.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Page missing
from book
at time
of scanning.

botanicus

Page missing
from book
at time
of scanning.

botanicus

Page missing
from book
at time
of scanning.

botanicus

Page missing
from book
at time
of scanning.

botanicus

(2) I say positly almost Every
flower is impregnated, but some
necessarily fail to become sound fruit
by the Exhaustion of the plant on
acct of the vast no of blooms, —
& on this point I adduce the
following. When these Yucca was
first in bud & bloom I observed one flr stk
wh had been partially cropped
by some animal; — I cut
away all the remaining flr stks save
3 or 4 on one branch,  thus, —
thinking I might push all the
vigor of the plant into those
few buds, & so get sound capsules
with sound seed! Now upon Ex-
-amining this plant I find Every
flr was fertilized, now becoming
Capsular, & pedicel turned & erecting
itself! Would all of these 3 or 4
blooms (Even tho impregnated) have
thus side by side run into fruit
on a tree covered with flowers?
not impossible certainly, — but it
is not usual! I also observed
another stk had been mutilated,
& on this also it seemed to me
there were many going into
fruit. ———————————

Now for another Enclosement as

to <u>Nº 3</u> referred to in "notes"
sent N. "Last! In this same
field of "Nanny Cr", I had before ob-
-served a few straggling plants
but a few steps off, on the old
Cotton beds, wh I was somewhat
doubtful of — whether they belonged
to Nº 2, or 3; — but a whist, bronze-
-colored flower stalks, seamed & rough-
-ened as last year, — covered with
long leaves wh were closely imbri-
-cated at the summit — soon declared
for <u>Nº 3</u>! This plant was not
over 20 steps off, & about 18 inches
high, while fourteen plants of Nº 1
were in full bloom — all resembling
each other in the minutest particular,
especially in the pale green (faint yellowish tinge) flr stalks
& the very long panicles! In the other field
not far off ("Sagittaria field") both Nº 2
& Nº 3 distort themselves alongside,
for the Examination of all who choose
to look & compare; — Nº 2 being
smooth & purple & about 6 feet high,
— first commencing to branch, while
a great many of Nº 3 are just
commencing to push as above.

MISSOURI BOTANICAL GARDEN



2. June

I was curious to see if the patch of No 1 at "Buck Isld" were blooming this year (of wh specimens were sent last yr), so opportunity offering – I visited the spot, & found some 5 or 6 plants corresponding in all respects with those at "Nanny Cr Field". About a half mile further on, found 2 plants of No 3 with stalks full 18 inches, & corresponding exactly with all others seen both this yr & last – all Seamed & apparently minutely pubescent (rusty) & bronze coloured. The leaves of this were wider & longer than any yet seen, but corresponding with those of others. Extended my walks to the edge of the woods in rich & mellow soil, when last June I found the very fine specimens of the smooth-long-leaved No 2 (the plant sent last mail!) & keeping t. find a few long, stout purple stalks running up to 8 feet, as I did last yr! But in this I was disappointed, the brow-grass having been burnt, & with it the plants & even the adjoining fence.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

The fire had burnt a little on the
edge of the wood, & posing — to my
very great surprise, — a large cluster
of the true Y Cincara (No 4) [illegible]
Such as I found near the Cingarees
at my Fathers'!! Some 50 plants in all,
& but a few steps from the very spot,
Smooth, — long leaved, — sharp-spined No 2!
Doubt not I sought for blooms, — "carefully"
~~[illegible]~~ if not with
"tears" but to my great regret no
fls stalks! Now what I wd ask, is
this; if the various differences in
the Grasses about me are produced
by soil, & posure & non-Exposure,
— why should these two be so utterly dis-
-tinct, almost touching each other —
as No 2 the long leaved, & No 4 the
spoon-shaped ?! And I ask the
same of No 1 & No 3 in one field,
& again No 2 & No 3 in another, &
all of them preserving their invariable
characteristics! If they be all one, then
these marked distinctions are produced
by other causes than soil, & sun-shine,
& shade, & rains "Skyey influences"!
Or are they Hybrid? — but if Hybrid
then have these varieties or species
now become fixed! And yet when
asked to describe these plants I am
sensible of the difficulty of doing so, yet
certainly the flowers, — the arrangement
& length of the filaments &c — the
Stigmas &c differ in No 1, 2, & 3,

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Rec'd June 8 1892

3) & so far as No 1 is concerned how good for this year as last! And I expect to find the same how good also with for No 2 & No 3, and what is more I am confident the Seeds under the microscope will bee the same tale! I do not believe that No 1 & No 4 (Fl. Notte) are the same. Now, another matter as to the No of the leaves — I suppose all of them vary therein, & I doubt if they be the safest guide! My Fort. notte No 4 was leafy — if I mistake not, some 80 or 85 leaves I believe — or was it less? But those of No 4 just I examined at "Buck Isl" were a few-leaved, as few as No 2! No 1 is very leafy — always! generally 100 leaves, sometimes 80 or there about. No 3 is less, from 50 to 75 generally, — most frequently the latter, — but No 2 always so far as I know from 25 to 50. The question is however whether it be invariable Eno' to give a name to a plant! Seemingly it is so with Paucifolia name — Wh. seemed to me most appropriate, but to me the most distinctive feature is the purple flr stalk & the long stemmed — sharp-shined

©GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

lanceolate leaves, — but these Botanists don't believe in Colour. I do! when I see it ~~the~~ so persistent with all varieties of soil &c about me. I will say that altho' I've examined a great many plants of No 2 both on Hilton Head, & on the main-land, yet the longest leaves were those sent from "Seabrooks", & "Buck-Island" (last sent by last-mail!):— These are unusually long! Shortly I send a piece of the stalk of No 3 please lest its pubescence as under the microscope, — wh I think is like Y. glauca somewhat. One more — I will state that I have never yet seen a young stem* plant pushing out from between the leaves above ground;— all of these push out from below the ground from the subterranean stem, from a few inches to 2 or 3 feet or more. I believe.

Enough for the present, — will hastily insist any more "Notes"(!) on Ls. &— until after the Capsules & have been formed of all of them. & the flowers noted!

* of course I've seen it frequently in Y. glauca & Y. flaccida!—

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Acc. Num. 3
21

3 June, 1872

My dear ——— I send you the enclosed & the contrary to your injunctions, — must say, that I feel I taken somewhat of a liberty in scribbling off such vain repetitions, for one whose time is valuable. This without any the slightest expectation on my part; yet I send them because encouraged by your kindness, & with the hope that some random shot from an unknown hand may be chance hit! The beautiful little Kalmia hirsuta now "takes up the wondrous Tale" & will gladden the pine-lands & my heart also with memories of a past time, & next the Phlox glabella & so on through the cycle! — Yrs Ever



MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Rec'd June 25 1872
from Dr. Pat Mellichamp
Ulloa Mts !
17. June 1872

Examined today the Patch
No 1 at "Nanny Creek" & found
the latter destitute of flowers.
but full of smooth green Cap-
-sules; — all of wh apparently
were constructed in the centre
& all of course this time
erect! Our stalk especially
was much crowded with fruit,
& this was the case with I ob-
-served so many insects of
various kinds — & also the first
commencing to Wither flowers con-
-taining the glistening drop of fluid
as before discribed. Does this
serve only to attract the insects
or does it afford more materially
in the impregnation? I observe
pretty much the same thing
with the Asclepias Obtusifolia,



MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

the erect leaves of the stamineal cone being full to reflexing with fluid — wh seemingly attracts Insects &c, & without whose agency probably fecundation is impossible. This only in the mature flowers.

The length & size of the Panicles are now more readily seen, as well as the peculiar growth of the limbs — see diffce from Nos 2 & 3. The capsules are of a pale green, the colour the pods of an English Pea & remarkably smooth, neither do they spurred (?) like those sent from Stiles' Pt — I as I sd; — this I sup- -pose is on the elongation & receiving of the stigmas. Would not this indicate a considerable difference between Nos 1 & 4? — but indeed I cannot the slightest idea that they are the same!



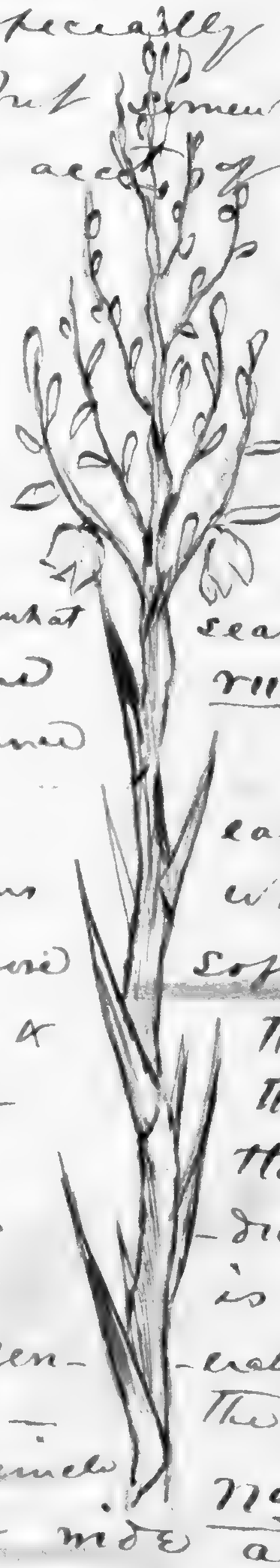


Not 20 feet off from this Patch of No 1. was the just commencing to bloom flower stalk of No 3 — only a few of the lower blooms having burst; — in 3 or 4 days but they it will be in full bloom. Although a very vigorous stalk it was not nearly so tall as No 1, but covered with leaves wh and much longer than either in No 1 or No 2. Indeed this is a characteristic of No 3 & always observable from its earliest growth, — the leaves being im- -bricate when completely concealing the young flower buds — reminding one at this stage of the artichoke (Cynara Scolymus) — I

mean only in the intricacies! The stalk of No 3 in its earlier stages especially is not straight like No 1 & No 2 but somewhat twisted — having a jointed look on account of the protuberant bases of the leaves.

In this plant before me at Nanny Creek I observe the same characteristics as noticed last year at other places many miles The stalk from being at first somewhat and pu- -bescent has now become This al- -most fenugineous appearance have dis- -covered comes from the & pricking of insects along the seams the stalk is tender; — it is more & succulent than either Nos 1. or 2. & seams & lines of the same being eaten into from top to bottom peculiar- blistering & pustules is pro-



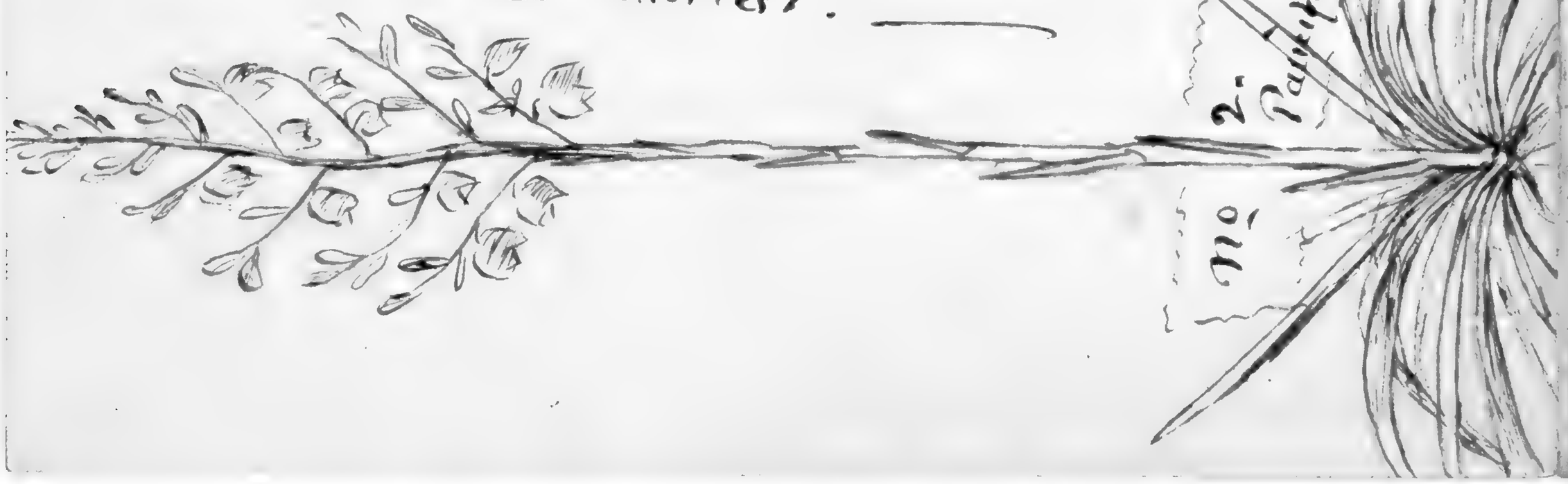


The Panicle also shorter & smaller gen- -erally than even No 2 — The limbs of the panicle not spreading wide as in No 3 but as compressed against the stem as above. [I fear my leaves above are just "a leetle" too extravagant & "fenx", — & yet I have seen them thus in the most Wild!] Panicle also pubescent, purplish & bronzed. Flowers larger than No 1. — — not so white nor so delicate, — altogether heavier & coarser, — corresponding also as to Stigmas — filaments &c with the Examination of last year. I hope to obtain good sound Capsules from this plant — which I expect to be roughish & coated like last years — & not smooth & pale-green as in its

No 3.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

more elegant & delicate neighbour № 1.
but a few feet N! ———————————
I now crossed over to the other field ("Sage-
-retia"!) to see what had become of
the two tall purple stalks of № 2. be-
-fore mentioned. Both of them (Pauciflora!)
were now in full bloom, having far out-
-stripped their many comrades of № 3
a few feet N - wh however were rampant
ens' in their array of spear pointing
leaves - but will hardly bloom for
10 days yet. (These latter (№ 3) are pre-
-cisely the same as the other plant
commencing to bloom, - wh has been de-
-scribed then of as "Nanny Cr") ———————
I find № 2 (Pauciflora) in all respects the
same as last year, answering accurately to
one of the same wh on the 8th of June of
this yr. I found in full bloom at NEW
River ≙ a flower of wh I shall send. Panicle 10 miles off.
short, but a little more spreading than in
№ 3 — pubescent but not as markedly
so as the latter. Flowers large, precisely the
same as № 3 save in the greater elongation
of the style of the latter. The stalk
usually reaches a greater height
in № 2 than in all of the
rest. № 3 the shortest. ———



0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Rec'd June 25. 1872.

(2) For my own satisfaction I must designate
№ 1 as Y. flabra. It is peculiar
in its long panicle & the pale green
of the stalk — but Spiculiferous is its most
peculiar feature — extending to the capsules
as well; — therefore Y. flabra hereafter
to me is it, no matter what outsiders
("Botanical individuals" may say.
№ 2 is most approximately Y. Canicifolia
as you suggest — and Y. P — as it to me
henceforth — but as for № 3 I am in
doubt. It is Pubescent, (Pubescens?)
rugose, — Sulcate, — ferruginous, (hardly
by the help of insects.) but perhaps more
Especially leafy-stalked, — but such
Disputed matters require much meditation!
So as № 3 lie over for a while
until I can feel satisfied ~~xxx~~ as to
what my poor plants may be, —
— whether only chance "Varieties" — or
freaks, — or Species! Nevertheless I
shall believe them to be the latter
until the Seed say otherwise, or until
it be proven to me that Yuccas vary
more than other known plants, &
that such Variations depend upon
far deeper causes than the poorness
or richness of soil or the absence
of shade or sun-light; — for I think
that I've stated proves — that such in-
fluences exert but little effect. As for
№ 4. I greatly regret that the clumps

GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

of them lately discovered at Buck Isl^d
so near the long leaved Pancratium sent you —
have no flowers, so that I might have
seen them all in bloom. I am curious
to know whether the stalk, panicle, &c of
this (No 4. Y. Concava) is like No 1 (Y.
Glabra!) Doubtless they approach each other
as Nos 2. & 3. do, but they may still
be as distinct — their leaves at any-
-rate are different: ——————
Last mail I sent the Fourth Capsules
of No 1. ~~&~~ & hope they will reach you safely.
& previously, whole plants of No 1. No 2. & No 3.
also the leaves of No 4 (Y. Cinerara) from Buck-
-Isl^d. I have not much to do, ~~[redacted]~~ the
sickly season having not yet commenced & so.
have amused myself by looking after these things
& scribbling — away!! I am conscious that I have
on the same string, & without Variations, & therefore
run the risk of being tiresome, — but you have
doubtless much to do, — so if you do not reply
until October (by which time you will have most
likely examined the seeds & capsules of air)
I shall be very well satisfied. Meantime I
shall continue to look after them, & if any
thing new turns up I shall inform you.
But let me myself & thank you very many
times for the beautiful specimens of what I
take to be P. Stylosus — for there was no letter:
Is it not P.S? & does it grow in y^r State? I be-
-lieve dwarfed forms of it are to be found in the
Carolina mountains. Terminal — is not this?
It reminds me somewhat of an Exquisitely beautiful cone of
what was labelled "Norwegian Pine" from Ft. Motte S.C
but wh of course is a Spruce or fir I imagine.
Last letter of Jones 26. ap. I believe this is my
fourth & ~~they~~ the cry is — still they come"!
Yr truly & very J. H. M

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

GEORGE ENGELMANN PAPERS

MISSOURI BOTANICAL GARDEN
HUNT-MUHLENBERG PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Please excuse second-
sheet illegible - but Blue Mts so
compelled to write hurriedly!

13 Jul'12

To W. B. Engelmann — Rec'd July 20
(Mo. Bot. Garden)
and Ans. Aug 7

I enclose my W.B.E.'s
ascending scale
of AGAVES — Last mail I sent
you a package containing three very
fine Capsules of No 3, — also three
of No 1, — also two withered mosses
captured within the fl'rs of No 3, — A
one specimen of that species being a bulbon-
ous or else very low one sometimes
completely conceals a green plant
stalk & branches! The mosses there far
only found last Yr & this on Nos 2 & 3,
but the bulbs on all the Varieties (?).

A day or two ago, while riding thro'
or cross Field on Hollow Head I found
a patch of No 2 with a well matured
capsules, & these I now send, as I
will see to be them green. You will
observe their lack of constriction of the
base, their more oval form, & the faint
tinge of Pink or Purple ash some of
them assume — also their greater size —
than all the others I have thus far
observed!

I have only thanks to give you for
your most obliging & instructive letters (2)
in reference to the impregnation of Y.
& your own satisfactory & pleasing, as
well as your acceptance of my "A. Tut.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

– rosa"? as a good species of Acaules.!
∧ now yesterday you note ∧ the beautiful
specimens of Pine! many thanks for
Yr kindness! When last I visited the
patch of No 3 they were already running
most abundantly into fruit, but on a
few of the remaining plants I attempted
Yr plan by forcing the pollen grains into
the tube. I marked them ∧ await
the result — as for the other Experiment
I doubt if I shd accomplish anything
with so inferior a magnifying glass
as I have at present I have been too
busy lately. ———————————————

I confess to some suspicion that You
shd not have endorsed Bro Jos's
dictum of my "A. Tub.?" being a
monstrosity! When I found the plant
last year swarming of ~~hundreds~~ many of
the true A. Tuberosa, ∧ observing the
resemblance of the leaves ∧c to the latter
I was disposed to look upon it as some
freak of Nature — for I have never failed
from year to year to look a bright look
out for anything new ~~in this~~
in that Especial family — for wh I
have always had a peculiar Weakness.
I however marked the spot, pulled
the plants ∧ wrote Yr the notes sent
Jos (in part) ∧ also made a
rough drawing of the flowers. &c &c.
Tegner, I find ∧c.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

This year I found the same plant in bloom, & on the edge of the cotton field about 20 feet off & acres & diket & bank, another & still more vigorous plant — in all respects similar. But these are the only 2 plants I have ever seen! I fancy they may be the only two on the globe! — for I cannot see how such a species ~~has~~ shd have so long escaped me if at all diffused. Your reference to the genus made me laugh —

"'Tis sweet to see one's name in Print
(Ah! there's nothing ~~in't~~ in't"!!

But seriously, as regard the naming of Plants (they shd mean Eric, always thought either the names of Scientific Botanists (not Dabblers & Collectors like myself) or, ~~of~~ such combinations as most accurately describe some distinctive & peculiar feature, & this (as I think) inseparable. If (the an Accent (& it must be if you say so!) & Stem fits well be very accurate it seems. I shd not [illegible] fruit last year, if it does this I'll send it. If I attempt I shd set the root or top on this fall in good condition I'd send it & let you see it in its beauty for itself. I think it really ornamental & A. Sanguinea is also pret & sound Letter!

If I send a later shd be used

MISSOURI BOTANICAL GARDEN

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Yucca I'm getting to think is an elusive kind, a Phantom, a like the Irishman's flea when you think "you've got him" — he's gone! I observe the partition walls between the seeds in No 2 are not always to be found tho' generally so, & the leaves invariably long. Sometimes, after they've spent up in a field after having been after chopped the leaves are short, but give them time & the length is remarkable. Y. Longifolia is correct — but by Comparison with other Yucca. Pancifolia is I suspect more so. I have collected a good many Capsules with an ball of moss (the same I imagine with those sent you) they have been carefully dried up in a Cotton tumbler & I hope to report result. I fancy however that my old Mexican friend may have a hand in this matter of impregnation.

And now lastly about the Pines — I thank you very much & I see what Apical means. Some of ours are so, except occasionally in non vigorous branches. But I don't think anything touches my Australis & I was thinking to day when following mule-track thro' a Pine-land that you shot two bears Austrian & Scotch we had & live such a Lesson when the wind takes their topmost branches! when a child, living in the Pine-lands, I never tired of this "Cathedral music" & the older I get the better I like it! Your small fruit of P. Pinea is very much like No 1 & No 4 also I think, but the other of Pinea? is very familiar. No 4 Draccina just about me in bloom but I saw several in Hyde. I shall try & find out about the erection of the fruit when ripe. I can learn nothing from those I saw as were just blooming.

Very truly yours J H

Rec'd July 20 1872

In last package I sent a few specimens of fruit of "Bletia Aphylla" wh delighted me when I first saw it springing up under the first oak! — Never saw it here before this year, nor its predecessor of April Corallorhiza! I welcome all new comers — Except Carpet baggers! I enclose what I take to be Zygadenus glab. wh I found in a damp prim-land to day Please say if it be Z. G. when I write again in Nov or Dec — also Lysimia Maritima wh I believe I sent you before. This was growing on an old marsh mud causeway wh has become covered with Rushes & Salina grass. I like it because it ranges under the Arcle/sinuata! Also Hunter of our Common Caelia Opuntia

GEORGE ENGELMANN PAPERS MISSOURI BOTANICAL GARDEN

0 1 2 3 4 5 6 7 8 9 10 cm
copyright reserved
MISSOURI BOTANICAL GARDEN

I am sorry to be a nuisance from time to time & I feel sure from the kindness of a friend. Last year I procured from the Sand Hills of Hillsdale Mass. [redacted] Plants of O. Pes Caprae & planted them for the purpose of observing their flrs. But although there are many plants & they are growing beautifully, no bloom has appeared. I never saw the flr & never saw any man who had!

If you will take care of the Capsules of No 2 (Pauci-folia!) you will be able to satisfy yrself whether the worm is the larva of the moth sent before - unless crushed in the mail. Will send No 3 when more mature

Yrs

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Yucca from Dr Mellichamp

1. 5, 1872 July & Aug. tips & unripe Capsules Leaves
4. " Nanny Creek 1 Sum leaves & young capsules
3 " Carbunch, whole plant. leaves - Cattle
1. 1871. Dan. Huntley 1 last old capsule " and dried
leaf-stalk
2. 25-30 May. 1 flower leaves & above

4. 6, 1872 1 Sum. Buckeye Creek leaves 1 old stalk
1. 1871 Dan Skiles pint capsules long roots, leaves
rough, same drop of the No 1
2 { Sand & April Woods, same locality leaves
3 { April 71 leaves Trimbleton plateau

1871 Dan Orangeburg Co leaf tips
5 Dec Congaree, leaves
4 Aug Fort Motte young plant with spotted leaves
7. 1872 Sum & young fruit

2. 7, 1872 Sept Hilliard Pappy Creek, green
branch & leaves -
6 Jan Cesar long (stout) point -
roundish fibrous - petiole
5 1871 Sept Capsules, old stalk.
4 Jan 1-13 flowers & p thin stalk
3 Feb old Capsules thin stalk
2. Jan Rotten old leaves
1. 1870 Dec Seabrook Capsule & leaves

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Leaves rough : 1. 4 thin dry

smooth : 2, thin

— 3 — —

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

St Louis July 17/92

Mact. Engelmann
Dr Sir

I wrote you a few lines
a couple of days ago, stating that the Salve
had increased inflammation to and that
my wife awaited your instructions in regard
to its further use - That having heard from
you I take this method of asking again.
and would ask your advice -

Respectfully

J. L. Lemming

Lemming
Smooth - 1. 4 Sh Sy
Smooth - 2. Ent Sylvan
- -
- -

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

3 D. 1872 Aug 1st [illegible] not green Cam

1 " July a whole [illegible] with grey fruit

4 1871 July Leaf & Bark

5 " July 20 Creeping [illegible] Leaves

nearly like [illegible]

2. 4 [illegible]

[illegible]

8 1872 do Flowers

6. 1871 Aug. Dried stalk,

1. 2 June 15 flowers Bract Leaf

Fruit & Calyx

3. " Bracts Leaf & Bract

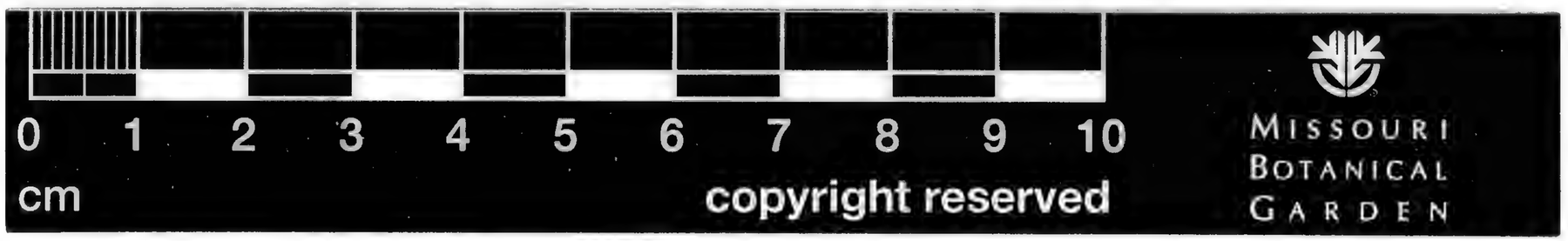
7 1872 Whole plant, leaves Tubers

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Lieber Freund

Herr A. Braun sucht
die Gesellschaft, die der Verewigte seinen
Sohn für Monate zu üben bringen. Er ist
auch an seinem dritten Geburtstage gewesen
und wird sich sehr freuen, Ihn
gleichfalls zu sehen. Er hat so manchlei
Muthen mit sich, es für den
Original oder Abgüsse mag sein
mit zu sehen Stämme sind.
Herr Braun, dankenswerth für, wie
Freunde von uns und Wissenschaft, Ihnen
die mit Pflicht die Einigen. Wir wissen



MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Rec'd July 30th
Ans Aug 4th

Blufftown
26 Jul 72

To
Dr G Engelmann
St Louis Mo

I think you have
ere this rec'd packages
of Capsules with Nos
2 (Pancifolia) & also
of No 3 — the last with
almost the whole panicles.
A few hours ago in cutting
the marking to see on
patient I found several
of my Dracenis just in
fruit — on a little reed
— surnamed "corn"!
Stirred my heart
them to try & satisfy
myself whether the
spring Capsules of G.L
erecta themselves like

the dry filamentous
ones & afterwards became
pendent from weight &
bulk — & were always
a from the full pendent.
Now this time I did not see.
these steps in the first formation
stage after impregnation but from
the appearance of the dried flowers
& the very young fruit & also the
older fruit I am satisfied they
never erect themselves. The fact is
the flowers are long & heavy & the
pedicels also very long. So the
young fruit remains hanging
downward previous as the flower.
Certainly such was the case
in the 3 or 4 dozen I saw
morning. Awake or two afternoon
on Hilton Head as I went
on I found several fruit in
flower, but I cared them learn
nothing from them. I send
herewith by this mail 4 cabinets
re of U.D from "Corn Gold"
so that you can see for yourself.
It has been a terribly
hot day & hardly yet dark I
received from the schelling on the
water So must close.
P.S. I enclose Kipling a copy
flowers of U.D. & the
on Hilton Head
week or thereabouts

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

GEORGE ENGELMANN PAPERS

I say again "Nor a Dec"!— not that I am "ungenerous
but you are liberal
with valuable time, &
I would have spared you!

Shurtleff Coll. To know
& print of 9 & a

Blue Mts. T.C
2. Aug/72

To—
Dr. G. Engelmann.
(Edinburgh 6th Aug)

Nor. Aug 9th My Dr. E.

I started just an
half hour o'Sundown when a
man with a long legged mule &
a "Rawhide" shackled buggy Summoned
me to go 13 miles in the country
I purpose to take the P.O. in our
way, & to my surprise & great delight
the Postmaster P.M. shuffles out a
letter with yr now to me most
familiar hand! A three days ago I
to mean cares & the Vexations
tyrannies of the time!— The Evening
gales blow sweet through the cool
Pine-lands, & while my friend the
Countryman beats & belabours his
mule,— I shall read my letter!
And a pleasant time it gave
me & for last my heartiest Thanks!
I was somewhat prepared for your
conclusions (?) or to the interpretation I
guess from what you had formerly
written, & yet somehow I do not yet
feel entirely satisfied as to this matter
of fecundation by the said moths,— with
doubtless springs from my ignorance
of Entomology. (See how the Sciences

Shurtleff Coll. To know
& print of 9 & a

No 2 & 3. capsules

now touch Each Other at so many points!
Is it possible that such an insect could
lose from outside the tender capsule & deposit
its egg within which in turn becomes the dirty
red worm (several of wh I have examined)
without its pushing the pollen to down
the stigmatic tube? I only ask for in-
-formation & suggestion, so as to be sure
about it. From the fact that in the
young Capsules I have not seen any
mark of Punctures & that the egg seems to
hatch almost within the Seeds & the
worm steadily eating his way right
through & then going out into the
outer world — I am inclined to think
with you that this little moth does the
business, ~~and~~ provided, we find that in
going through his changes ~~he gets back~~
~~once more~~ the larva gets back once
more into the same moth! This we
have not yet seen, though hopefully any
skillful Entomologist may say with ac-
-curacy. I did not place any sand
in my tumbler wh container the capsules
full of larvae — because I thought it
likely they behaved like our cotton
Caterpillars wh make 3 or 4 broods
during their work of havoc — that is,
— the fly first lays the egg & the
egg becomes the worm, & the worm
instead of falling to the earth winds
himself up in the cotton leaves &
after a short chrysalis state bursts
again into the fly & so on, — the third
brood generally doing the business of

GEORGE ENGELMANN PAPERS
MISSOURI BOTANICAL GARDEN
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

GEORGE ENGELMANN PAPERS

eating up a field, wh I've seen happen
in a very few days. May not therefore
there be more than one brood of your
Yucca moth during the summer? & why
should they not "wind up" like our cotton
Caterpillars instead of falling to the earth?
~~How Come~~ And yet what would they live
on!? Now a few of my dirty red
Yucca worms did creep out & eventually
disappeared in slime at the bottom of
the tumbler, but still I find certain
small chrysalids encased in thin webs
among the capsules & pedunculus &c, wh
possibly may be the same & wh may
yet "transmogrify" into our little friends
the white moths! — We will see! ——
Furthermore — if these white moths be
"the sinners" engaged in this impreg-
-nation they do not seem always to per-
-form their task. Last summer
you may possibly remember my re-
-ferring to a very tall & beautiful
specimen of No 2. (Y. Pancifolia!)
in bloom, the flowers of wh were
filled with these same moths, (I
remember once scanning the same
after a shower in the afternoon)
— and not a single ~~Cat~~ flower
was impregnated, & not a capsule
formed — to my great disappointment
This was the same plant with very
long leaves wh I sent you marked I.I.

MISSOURI BOTANICAL GARDEN
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

But of course because they fail in their
work on certain plants is no proof that
that they do not do it on some! — still
I mention it! — Again, my patch
of Yucca No 1 at "Nanny Creek field"
is very fertile this year, there being
many capsules on each stalk, & yet
I do not remember to have seen a single
white moth hidden in the flowers, tho'
there were hundreds of the bugs wh I
last sent you, & some of the
smaller wh you first had from me, & also
a few of another kind somewhat re-
-sembling "fire-flies" — or "lightning
bugs" — as "we boys" used to call them
in the old days! Nor is this any
proof of the non-agency of the little
white moth, — but I mention it!
They may have swept the shades of
the cool woods wh were near & return
in the night time to the green
plants! The moths wh I sent you
I found in the flowers of No 3 in
"Sageretia field", & these plants are
wonderfully prolific in capsules, &
I may say in hafing - that all my
Experiments for the fecundation of these
flowers failed — indeed when I got them,
fruit was forming largely, & the flowers
left were perhaps inferior & unfit
for the work.
It seems I had somewhat anticipated
your wants, for when I rec'd yr letter

GEORGE ENGELMANN PAPERS
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Rec'd Aug 9 72 (2)

I had already sent you a note with accompanying package of fruit of D. Draconis - or Aloëfolia I shd say — just collected on Corn Isl[d]. I have since Examined others & am still of the opinion that the flower after impregnation ~~still~~ remains pendulous - never erecting itself with the young fruit, tho' as I before remarked altho I saw many flowers wh ~~had~~ were just blooming it was too early to be assured of their fertility, all fruits all were pendulous. The young fruits ab[t] I sent you were also all of them hanging downwards like the flowers, tho certainly if ~~they~~ these had ever been ~~erect~~ erect, their weight would not at this early period have pulled them down - as you must yourself allow. It is possible nevertheless that these small capsules were mal-formed & abortive, — but no matter the flowers had been fertilised, & if it be their nature to ~~have~~ erect themselves after the manner of the dry capsular ones, these should have been erect, for as above stated their weight wd not have dragged them down. I conclude therefore that the fruit is always pendulous. Had these things been always under my eye in my own yard - I might have speeches more ex-cathedraish, as it is I give you the best I can get, — but to me it is conclusive! —— — possibly not yet so to you! ——

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

I do not see that there is any special
difference in the construction of the Y.
Aloifolia fls — from the filamentous
Yuccas, & if the moth could exist in
the one case he cd as easily exist
in the other, & in both cases after
all what the ~~moth~~ larva must subsist on
must be seed & not Pulp! Unfortunately
I have no Yucca Aloifol. plants in
bloom near me, — only on the little
isld difficult to reach except when
passing on my pony walk — have
they bloomed & fruited; so I cannot
tell you whether the filamentous white
moth or another is to be found
in these fls. This is unfortunate!
But I can tell you what I
have seen thus far; if one carefully
Examines the surface of the pulpy
"Bananas" (Y. Al.) (and they are now
many of them of full size — tho' green,)
minute punctures or depressions are
to be seen these Evidently ~~from~~ performed
by some insect from without — inward.
An egg is laid just outside of the
seeds & surrounded by the pulpy portion,
which egg becomes a worm, & which when
matures eats' turns instinctively for the
seed
& commences to eat away. I have
now before me a portion of the fruit
with a seed partially gnawed. I traced

MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10 cm
copyright reserved
MISSOURI BOTANICAL GARDEN

the worm from his nest outside of the seed to the seed - which I found partially eaten, & there I discover him snugly ensconced! And this in one or two other instances. In other examinations the worm was still quiet outside of the seed in the pulp, not having yet commenced to bore. This worm is much smaller than the filamentous one & white, not reddish. Possibly he is young & may grow, but if big enough to eat is he not full grown? Possibly he will turn out to be the reddish white one with fore thirds sprang from the moth? Who knows, time will decide! So far it seems he comes from without - inward; whereas the other comes from within (stigmatic tube) outward, — tho' both eventually make their way out at some time or other - no matter what their mode of ingress! But I see no reason why the same moth may not perform the same offices for both the pulpy & dry capsular species. If it is seed they want & seed they can get in the former also; - only the larvæ will have to cut their way through a little heavier crust

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

of rind or pulp! It remains there-
-fore to be seen whether the reddish larvæ
found in capsule of filamentosa is produced
from the ovipositor (as we say) being thrust down the
stigmatic tube, or, — from the tender capsule
being pierced Externally — as seems to me to
be the case in the Pulpy species. If the
latter then the moth (Tortrix!) may not be the
agent in impregnation. But some other!
But what is the use of talk when one
must wait & see what indeed Nature says!
See now MyDs! what a brave fancier I
am! — Ignorant — Surely so of Entomology!
& yet running on after this fashion — wh
may make you & some other Explode
with laughter at my mistakes! But no
matter! I shall continue to Examine fruit
& report — shall send more to you also. I
must mention that last fall having collected
a good many fine Pulpy fruits of Y.A. I placed
them in my Room, — they gradually softened
& generated a vast no of very small flies of a
dirty whitish brown colour & larger than the
"merry wings" or "sand flies". Upon un-
-covering the paper Top of my tumbler with
the capsules of filamentosa, I saw several
of the same, — but this doubtless occurs in
any decaying fruit — & has nothing to do with
the matter in hand. ———

There are no intermediate forms (I never
saw them!) between No 1 & No 4! It is
either No 1, or No 4, — Neither more nor
less! and I can't look upon them as
males a 'little trunk' — wh so far as I
know Nos 2 & 3 never do. The No 4 from
the middle Country (Ft Motte) (& I Examined

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Rec'd Aug 9 72

large patches of them) - is always the same both up there - & down here: I mentioned to Jen that I had found a good patch of them growing but a few feet from No 2 (V. Pauciflora) precisely like them up the country, & I sent you specimens of the same. Did you get them? — marked I believe "Buck Island". Capsules entirely alike & flowers also, judging from those my father sent me. I did find differences in the subterraneans caudex, but not I think very reliable; — I can however again later to the Hoe, ah, like your "sarcastic friend" I am a believer in, as that I can use with more ease to myself than the Microscope. I think you mistook me. Did I ~~say~~ thought I preferred Longifolia to Pauciflora? — I said Longifolia was doubtless good, — but Pauciflora perhaps was preferable, not that the Plant cover'd as said to have few leaves — having 25 to 50, but it was Pauciflora by comparison with others. And yet I have seen No 4. down here with very few leaves. Flaccida is perhaps after all the most appropriate. Once again as to the fertilization of the Green flower. In the dry capsular forms the flowers when fertilized wither & become erect, — the others drop, — now in the Pulpy forms very many flowers remain on the Panicle - pendulous & dried, - among the fruit - tho' not themselves fertilized. They seem to cling with more tenacity than the others!

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

The Opuntia fl^s sent was the same you rec^d before wh you think O. Vulgaris, but to me it looks more like that western plant (O. macrorhiza) ^. If is not prostrate, erect. Longimamma wd be most appropriate for the other. Am delighted that I shd have discov^d a new Acerates, — will send fruit if it bears, — none last year:

Sent yesterday another spec^n of P. Elliottii just blasted ^ most atrociously fixed up for mail, as you said you had not yet had one showing the well matured cones on the branch. Shall send another of P. Australis wh I cd not get for your last year, — I have one cone, about 10 inches I think also another showing the cones of this Spring & last — wh condition I take to be Exceedingly rare. Unlikes the other Pines. I suspect P. Australis only sheds most every other year. Last year none, — this year millions of cones maturing this fall, but so far as I can see (& I have examined for miles as I went along) the cones of this Spring ('72) are extremely few — almost none! And yet they do occur, ^ on the same branch also, as my specimen sent to you will prove from a tree cut in the Spring or wh there were a good many such. But from what I can see on the road it is an Extremely rare event. But not so with Taeda, Serotina, Glabra and Mitis — they cast seed every year.

Will send bulbs of Lilium Catesbæi ^ dried flrs of same if you care to have them, — also Lachnanthes Tinct (found Yesterday) Zigadenus Glab. ^ "Tofieldia Pubens" if not found with you. First leisure I have has for a long time, (& a mixture of Malaria, Quinine & Coup de Soleil ~~from~~ must acct for my fogginess as to leaves of No 2 wh I'll Explain another time. My Effort

Rec'd Aug 13
Ans — 14

Bluffton
7 Aug'72

To
G. Engelmann

My dear S,

Your last of 29 July has just come to hand, — that of 20 July answered a day or two since — at the same time sending a package wh as the mail man had to do some swimming is very likely to disappear wet & dripping in the vast Limbo of the mail. I will hope for the best as it contained specimens wh I invited you to get. You have received capsules of No 2 from Hilton Head (an island with a sea-beach 10 miles from me) & I may say I have never seen anything of the kind. There, — but you say nothing of the capsules of No 3. sent some time after, nor of the pulpy fruit of various sizes with pendulous flowers & small pendulous fruit of Y. aloifolia from (Conn Island). A letter accompanied the same two the mail, describing this last. I regard the pendulous matter as seeds. And now which I have leisure to day I send to reply to your queries at once — seriatim.

In my letter sent yesterday I expressed myself as not yet being fully

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

satisfied as to the agency of "Pro tuba"
in impregnating the flower. What I
had to say I'm afraid came strang from
Entomological blindness, & was very floundering
& "flabbergasted" (to use a new coined & ridiculous but expressive word!) I state, you
can see what I was driving at, & as I
believe you to the full of philosophical
good temper & Equanimity when dealing
with "feeble folks" — I trusted you will
pardon me. I have now furthermore
to say — that if every flower wh is fertil-
-ised is fertilised by the moth stuffing
in the Pollen & at the same time de-
-positing its egg — then, why is it that
every capsule is not bored by a
larva making its' Exit? A great
many are bored, — perhaps two
thirds or more, — but some are not —
as my mature capsules of No 1 will
bore to you, if you Ere get them!
[Although you will find hundreds of
~~so~~ black seeds among them you may
not find a single perfect one. I
found but 2 or 3!] Now if all
flowers are fertilised in the same
way, ought not all capsules To
be bored? — unless in Dec the
egg be in some way or other dis-
charged, — & Ere the larva before
he had had his fill of your seeds!
What say you? Possibly the worm
may die in the cerements of his

MISSOURI BOTANICAL GARDEN ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Capsular tomb — because <u>all</u> of his seed wh he [illegible] to eat — (a rather what his mother the moth [illegible] him to eat) — Wire — false! — no meat in them! ∧ So he dies right there, after the fashion of Dean Swift's "poisoned rat in a ~~hole~~ hole"! —

You see I think the whole thing so beautiful of the instinctive action of the insects, ∧ your discovery so remarkable — that I wish it to be so, ∧ therefore give you the benefit of all suppositions! — only I wish to be sure about it, & repeat ~~what~~ over again yr own Quotation corrected — "Amicus Sagel — sed magamic- ver!" [running comment re <u>DE CO</u> flab. marsh. — I believe I saw something like that in a school book 2 or 3 AONS ago! —]

But perhaps <u>you saw</u> this moth at work — ! That settles the question! How I regret that I have not these plants near me with of yr ∧ Y. Alcopt so that I could have watched them at all times & seasons! The former are in distant fields not easy to visit at night ∧ the latter moth, on the little reef away in the marsh! Better try ∧ save the larvæ of No 2 wh reached you alive ∧ see for yrself — if he runs back into the moth.

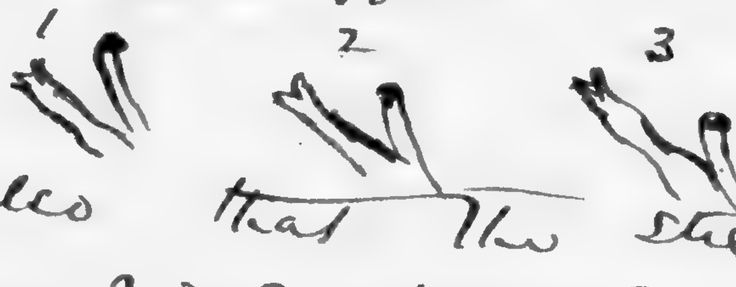
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

I shall not that the seed of Nos 1, 2 & 3 & perhaps 4 one again Examiner will distinguish them all. 1 & 4 have certainly the same flowering time, same capsules & same (?) seed, but it seems very curious that no other (so far as I know) is seen in the middle county & bears precisely the same characteristics of leaf. both at Ft Morris & James Island & here also at two places. I see no transition forms & the leaves of the two plants are so diff[t] that in my mind I cannot unite them, unless you tell me to do so! No 1 is the smallest of all in Calendar form about one & more a legs erect[ed] - with secondary divergences wanting. This is certainly well marked — in one or two instances of the Hilton Head No 2, the sec. disseps. were either wanting also or incomplete but as a general rule we shall (according to my present knowledge) it is present in 2 & 3, & wanting in 1.

"The flowers made me approximate 1 & 3"! — I am astonished! If you had said the flrs of 2 & 3 approximated — I well have said "all right"! & even if you had insisted on classing them (2 & 3) together as you do 1 & 4 I might give a very sullen & grumbling assent (tho' I'd still whisper to myself in the style of one Galileo!) but I see

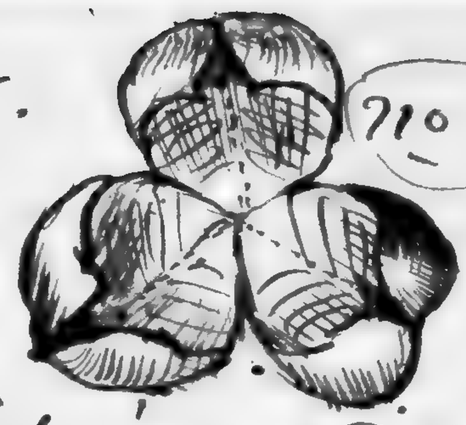
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN

2) Rec'd Aug 13 1872
no resemblance in their flowers. No 3 is ~~exactly~~ usually larger — thicker, heavier & coarser. ∴ ∧ extremely like No 2 save in that very difference of the filaments stig ∧ c 

. I observe this season also that the stigmatic tube was white in No 3 — becoming greenish as you advance the outer reflexed ∧ now I observe in the capsules a considerable beak; otherwise in shape ∧ by much resembling Hillii No 2. No constriction. yet last year in "Cemetery fields" they were longish & constricted also — why they not? But these capsules of last year seemed to be imperfect — tho' some I sent you I allowed to remain on the stalk until they assumed a blackish tinge. Perhaps such characters are unreliable — who knows? — "Irishman's flea" again! I will say this that altho' I believe No 2 & 3 to be entirely distinct, they are much nearer together than 1 ∧ 3 & even 1 & 4. But this last I've never seen in bloom. Dare say I can get plenty of seed of 3 this year ∧ from a new field. "Crisp ribs & reticulation" — not much in that I fancy ∧ the name of "prominent mid rib on each. Carpel". As for the "carinae" don't know anything about it from what I see here.

I do not feel sure that there is any special character in the difference ∧ bursting of the capsules. They seem to me to act all

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

in the same way.  (No 2) That is after the capsule commences to mature & has matured & shed seed — the fruit is still closed but commences to "crack" on the upper & outer portion — at the point of the false dissepiments. This "cracking" extends a short distance, less than 1/3 the length of the capsule — eventually the divisions or valves tear above from down to the base each other x exposing the seeds & dissepiments. At present No 1 is just cracking as you will see by those sent. I do lay stress on the length of the Panicles as I desire to see what I can in my own little world! can't help it ~~at~~ how other things behave either in Mo. or Texas! To me this an important feature & indicates a real difference between No 1 & 2 & 3. Possibly if I got among these various genera I might see all sorts of distinctions & might mystify myself (& you too?) Better mind! Better stay here & work these out fully — if that be possible! — I aimed advise you to save seeds of Hillia No 2 at new — (I dare say they are mature seed for the microscope) because a darkey here works

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

a fancy to my eyes two at
"Separated Twin" — so no fruit
right about me. A Yankee lumber
on H. H.! promised to look after
them I left a care them for me
when mature. I am more
pleased to rely upon the Examination
of seed in that way — for other
things are so terribly Elusive!
The leaves I send are in-
-variably cut as near the
ground as I can reach with
my knife & you can form
a perfectly accurate idea of
all these 3 species by Examining
the 3 plants sent & then
comparing them with the
fresh green ones I send from
time to time. You notice
at the mutilation of No 2. It
was first found of green, &
in that state was rather melted
& pressed in a close room — after-
-ward the leaves were shaken out
& tied up again for mail.
This specimen had the longest
leaves I have yet met. Tho' I
have seen others frequently
approaching it.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

In a cotton field where the leaves are cut from year to year they seem to be shortened after forming out. but if you get hold of a plant wh has not flowered & wh possibly may escape mutilation for just a situation the leaves another year will show the usual length. That is what I meant by giving them time!! It is undoubtedly a long leaved plant & hence flaccid. Generally has less threads than the red, old leaves frequently none. You can be quited entirely as I said of the 3 stocks wh are fair specimens — no variations of any sort. The threads are coarser in No 4 than all the others & quite abundant; — equally so in No 1, but finer & more silvery I think to twist & coil. In No 3 abundant also but perhaps a little less so than in No 1. & may be also — coarser. Somewhat variable all of these things are I conclude with diff plants in diff situations. Will procure good plants as you desire in Nov & cover also. Forgot to say that last week I sent you P. Ell. with cover of this sheet (received yesterday) & also of last wh are now almost of full size. In packet of yesterday P. australe. 2 specs with cover of last & this year planted in shiny & another just taken from tree. well, I've written "muchly" but don't think you've got much. Kindly — E.H.M.

GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Rec'd Aug 16, 1872
Ans — 19 —

Bluffton O
Aug 7 72

To Dr Engelmann.

My Dr Sir,

Your letters of 20 & 29
July have been answered —
& package sent by last mail,
— and yesterday came your
last of 4 Aug. You will see
from what I've written that
I do not feel as certain as I
could wish to be as to the agency
of the moth in the impregnation
of yucca, — but it all amts
to this!

1st. Is it certain & beyond
doubt that the reddish worm
found in the half ripe capsules
of Y. filamentosa comes from the
egg deposited by the white moth?
& has any competent person seen
the said worm go through its succes-
-sive changes back again into
the moth? ——————

2d. Supposing that this certain as to the origin of the moss from the moth, is it beyond doubt that the egg was deposited thro' the stigmatic tube ∧ not by the piercing of the capsule when very tender ∧ green?

3d. Is it possible that such a moth so constructed could perforate the tender capsule from without ∧ deposit its egg?

4th. Is it not a fact that the white moths are sometimes found abundantly in flowers wh are not impregnated, ∧ wh therefore fail to become fruit? (see letter)

5th. Is it not a fact that some plants bear fruit most abundantly, in the flowers of wh no moths have been seen? (see letter!)

6th If every flower which is fecundated be so thro' the agency of the moth's depositing eggs, — ought not every capsule to be perforated by the larva's &c.? (letter)

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Rec'd Aug 16 1872 (2)

in a half formed condition, or, if perfectly formed — too weak to commence his work — or — already at work gnawing away at the seeds! I said moreover that this worm was white, — not reddish, & much smaller than that of M. filamentosa, — still being immature it was impossible to say what he may or may not turn out to be! But from the fact that I could not trace him first from the seed, but from the pulp to the seed I thought it likely that the white & reddish worms were different! I now think it extremely likely that they are one & the same!

The Examination of other fruits discovered the fact that eggs or half formed worms were to be found not in the pulp, but right in the track of the seeds, but whether the egg got there through the stigmatic tube, or through the rind of the very young & tender capsule — was now the question! for I was not able to trace the canal from the seeds outwards! I gave you a drawing of these eggs or worms — Thus,  Being on Hilton Head Island yesterday I brought back with me several "bananas" more matured than those at "Coosaw Island" & other places. One or two becoming slightly purplish, but all of them

MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS

smallish — but with good seed, somewhat constricted in the middle, with the end twisted up  . I first examine for any marks of depressions & punctures which it is easy enough to find, — I cut off slice by slice as thin as I can until I approach the seed, — all the while following the track of the puncture, as indicated by a greenish a brownish marks in the white pulp, ∧ I come at last not to the original bed or nest in the pulp (for with in the former instances the worm has crawled to the seed) — (in this case) for there is no bed or excavation at all in the pulp — simply the greenish streak leading to the seed; — the lines of seeds are now presented, — they seem perfect ∧ yet they have a suspicious thin look ∧ treacherously hollow, — still their outer husk is unbroken, look closely, ∧ a faint suture mitten may be discerned, — look in the walls now ∧ "what is that I see before me"? — a reddish coloured worm hard at work ∧ tunnelling away thro' the seed! — perhaps he is half way thro' a line already! This worm at present seems not quite so fat ∧ maggot like as the other (4-f) ↑ but he is of almt the same size ∧ walks likes him ∧ of precisely the same colour — reddish white.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

from the egg thro' the Stigma! but-
there how to account (i.e. the egg) for my having
traced the worm from the depression
on the surface of the fruit, thro' the Pulp,
— to the seed, — within the seed, — where
Monsieur was hard at work eating?
Is not this worth looking after, if
indeed I've seen things aright? ——
As for the fact of Y. a. producing
fruit in Europe & not. Yet — it
seems very curious & rather bolsters
my theory above. — Intrigue are right
there I suppose it is — "faute de l'insecte"!

Please pardon my presumption in
offering any objections; — perhaps I
ought not to venture on such a
path with my want of Entomological
& botanical knowledge — only taking
up Y. time; — but I am really
interested & thought I might assist
Even myself with my vagaries! ——

Now say that as "Y. flowina" blooms
so late in the year (Sept & Oct) the
time is not fitted for the action of
these insects, — hence it is
sterile! True, I've yet found no
fruit, but sterile they certainly can-
-not be in all instances, for how
there is the plant propagated all
along our coast — in the drifting sands
of the Sea-beach, — in old fields, &
Even in the woods — under pine-saplings!

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Not certainly from stems & shoots — This in most cases is impossible. It is but a short time since I examined one in the woods near the River — wh was but a few years old, & wh without doubt came from seed. Seed of course dropped by birds, — Think you from some more Southern clime where they may be fertilized by insects? Hardly, — Perhaps indeed the plant sometimes blooms in June a July & then fruit matures! But I believe it blooms only in the Fall! ———

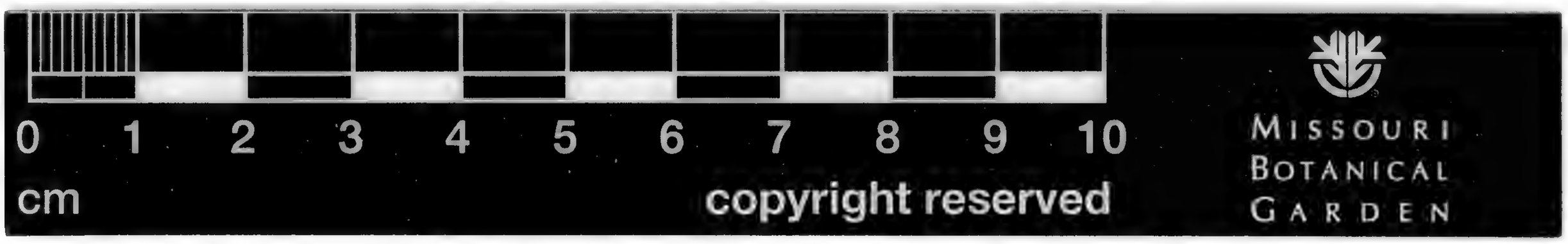
To comfort you now I will say that I have at last met transition leaves of No 1 — running No 4-wards — growing under trees in the shade! will let you see them; — Still I say the leaves ought to separate them. Nothing alike in leaf & growth — but if they be the same (if No 2.) {1. angust.} {2. latifol.} is the Exact thing. Paucifolia, by comparison with 1 & 3, but 1 & 3 may be paucifolia, the rarely or never — So strike it out! Longifolia! but I have seen No 2 short leaved in one or two instances & once No 3 long leaved — so strike that out, therefore Laxifolia let it be a placida. Laxifolia fulfills all conditions, for the leaves from their length & placidity give it a loose appearance — never erected. Decidedly the best! Y. Bracteata correct. Is it not a suspicious thing that it is so terribly hard to give these forms names & yet they are very distinct. The seeds I trust will prove it always — I do not fear it. It is going to be a hard business getting seed for you of 1, 2, 3 — Everything eaten up!

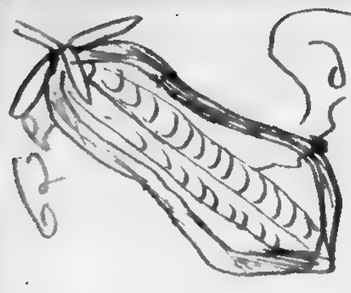
Yours truly C. H. Merriam

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

With my present lights I believe This worm to be the same as the one found in the capsules of Y. filamentosa! & how did he get in there? — Through the tender capsule in egg shape, — or through the stigmatic tube? But I trace the course of the puncture from the outer rind, thro' the pulp & to the seed — within wh I find him pushing like a mole. What do I infer then but that when the capsule was young — just swelling after the impregnation of the flower — the fly or moth (be it what it may, — Pronuba or some other!) pierced ~~pierced~~ the, then & left juicy seed vessel & laid its egg, — sometimes outside the seed, & frequently — perhaps almost always — within the seed, when I discovered it half egg — half worm in one & two instances; or, as now in mature worm shape, fulfilling its role of eating forward & backward, & then when its time comes — eating out into the outer rinds!

What do I infer then again? Why of course, — (don't you see what I'm driving at!) that if the pulpy yucca worm gets in not by the stigmatic tube, but thro' the puncturing of the walls of the capsule, — the same may happen to the dry capsular worm & that therefore the impregnation occurs thro' other sources.





depression, K
corner of puncture
leading to seed, under
wh the worm is at work

Wishing to ~~Hatch~~ Examine
these worms side by side I
broke into an almost dried cap
-sule of Y.6 No 1, when I was fortunate
-dently no idea of cutting them out - for they were
themselves in by a very slight ^ thin cobwebby cov-
-ering, under wh they were enjoying an anticipatory
chrysalid repose! & no sooner had we broke in
upon them ~~than~~ they became terribly active ^ in-
-sisted on getting out, ^ that, "immediately if
not sooner"! Nothing could keep them in, so I
permitted them a walk in the open air to
cool their excitement ^ stretch their cramped up
limbs —! I next kindly invited them to return
to their home — but like maniacs they stead-
-fastly refused, so placed them in my tumbler
one third filled with ~~sand~~ sand — to see how
they behave them! Nothing but walk-walk,
in a continued circle around the walls of
their prison Home! The earth in my
tumbler was packed ^ hard, — I bethought
me of loosening it with ~~it~~ I did, ^ immediately they
disappeared in the soft sand like moles,
— nor have I seen them since! Now
these worms I compared side by side
with those of ~~of~~ Alcaeolia, ^ Except that
the former were fatter as I said ^ now
mature, they seemed to me to be the
same ^ such do I believe them to be with
my present lights! Possibly an Entomologist
will discover differences immediately, but
then I'm no Entomologist! I trust to our
will be able to see them for ~~them~~ ^ judge
whether they be indeed the same. Now
granting them to be the same it is
of course possible that they both came

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

7th Is it not a fact that altho' very many capsules are bored by the worms making its exeat from the capsules, — yet, a good many also are not bored at all ? ——————

8th If it be proven that it is positive for the egg to be deposited not thro' the stigmatic tube, but by the piercing of the capsules when tender & green, does it not throw doubt upon the agency of this especial moth; assisting in the fertilization of the flower by transcting the pollen into the stigma ? ——————

9th, And if so may there not be some other agent ? ——

~~~
~~~

6th

full grown! I first stated that a small white worm (immature of course) was to be found in the pulp just outside of the seeds, — — his present condition dormant for the most part, but that in one or two instances he had worked him from his lethargy & pierced through the pulp into the seed — where I found him commencing to gnaw! The inference therefore that he was a seed eater & not a Pulp-eater; & so far at least re- — lated to his friend — or Brother (?) the larva of M. filamentosa!

Now this worm-ales I stated could be easily traced from the place in the pulp where the egg was deposited, and how? Simply by Examining the surface of the "banana" small depressions or holes ought be detected — tho' now pretty well healed over. Cut off a thin slice just over the depression & you will see the marks of an old puncture: then the white pulp & you continue cutting away slice by slice, you at last come to the egg nest, where the worm is either still

10. Aug '72

Rec'd Aug 16
7

P.S — I have just made another comparative Examination of the two moons of Y.f & Y. Al. & now enclose two of each fixed up in a little phial of alcohol; — They are ~~the~~ separated by cotton! The 2 below are from pulpy cat of Y. Alaefolia — The 2 above are from Y. f. No 3 (Brachiata)

I send the other letter by this mail.

The Y. f. are all about the same length, but those in shape, (Y.f.) — reddish, with a greenish tinge over the abdomen. Those of Y. al are slimmer, reddish, but not so pronounced a color as Y.f.; — also greenish over abdomen. The rings of Y. al. are more deeply marked — (not lived long enough yet & eaten enough to "fill up" like Y.f.?!).

(Y.al) Counting the head & the length of the tail as rings, I make 14 in both kinds — also 6 true feet

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

in fact — if there be others they are 7a aug 10, 72
rudimentary. I'm left with a few scattered
hairs about the body. mouth & head
seeming the same — darker brown in Y.f.

Please Examine & submit to Mr Riley
to determine, — you will however re—
— member that my Y. Al. worms are
not as ancient as those of Y. f
tho' both eating hugely — or rather
those of Y. f have done eating & are
now enjoying repose — Hybernating one
may say & hopeful setting fat like a "Bar"!
Possibly my Y. Al when they have
finished eating & are ready to hybernate
also, will have assumed the more deeply
ruddy tinge of Y. f as well as his more
decided alcemanic proportions! What say
you? The same, or only nearly allied?
I placed another worm of Y. f in my
terrarium of earth, & after walking at
little, down he burrowed like the
others!

K. H.

MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS

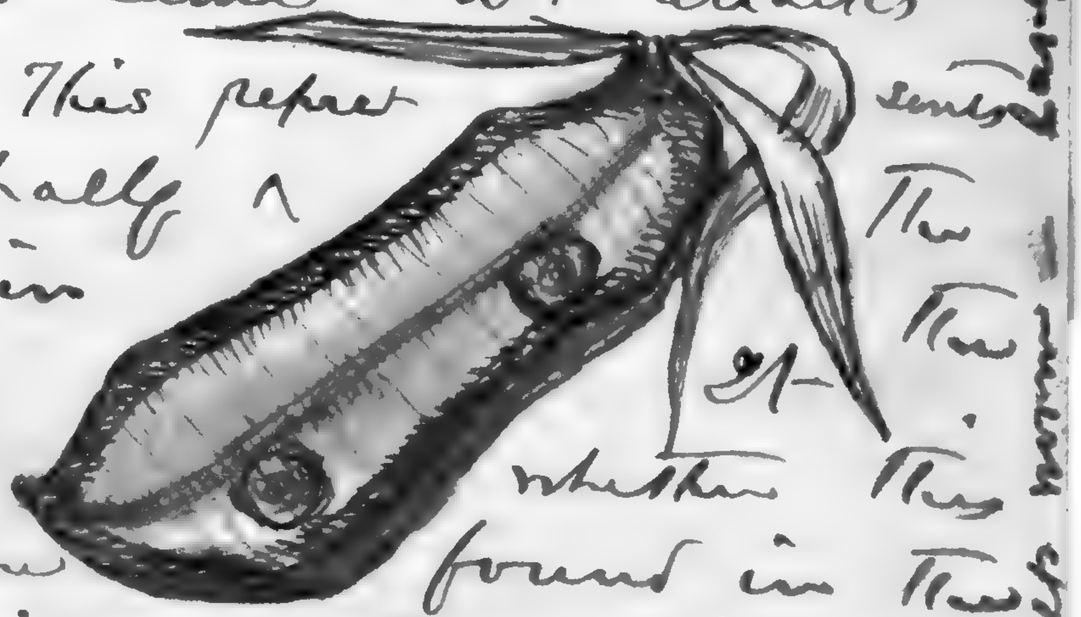
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

P.S. In my last letter I referred aug 10, 72 to a 71a
worm — (white & smaller than the reddish
col? larva —) which I found in the
pulpy portion of fruit of Y. aloifol, &
which in a few instances was lying
partly outside of the seeds, & in others
had made his way already to the seeds
wh he had first commenced to eat.
I said this worm must be ~~de~~ taken
from within the pulpy portion. (where the
egg was laid to the seed wh he
was ~~f~~ headed to eat & that it was
not likely that in his original
~~st~~ egg state he got into the
fruit through the stigmatic tube!
but from ~~the~~ ~~exterior~~ outside the
capsule in its tender green state.

MISSOURI BOTANICAL GARDEN PETER H. RAVEN LIBRARY GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

I have however just examined several of the smaller capsules of Y.A. about an inch & a half in length & what do I find? In several instances something very like a worm in action an egg turning into a worm. very like a young okra seed. & there in the middle of the mass of seed! Now can this is not the same as attacks the capsules of Y.f.! This pepper sent the cat: sliced in half & eggs a worm right in tracks of the seeds. remains to be seen is the same as the one found in the pulp of the larger fruit, or the reddish coloured Y.f. larva! You doubtless have sent of the smaller sort you & indeed various sizes to breed him yourself. I do not think this the same as



0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Rec'd Aug 20
Ans Sept 30
61

Enclosed seeds are
of № 2. no more. Bloomington
from H. Hear. L.F. Engelmann 14. Aug'72

My dear

As you seem desirous
of getting correct specimens of
y. leaf — I send by this mail a
package containing leaves of № 1 with
young & old — two leaves of № 2 from
plants several miles apart — do — do
of № 3 (one of these two longest I've seen)
also of № 4 a few feet from № 2, &
last two distinct varieties of "transition" leaves
marked 5 — the one running from 1 to 4, —
the other ranges & running from 4 " 1!
both growing under trees & quite near
together — rather poor & stunted & miserable
plants both of them but you may make
something of them as contrasting y. three.
I repeat that 1 & 4 however seem to me
very diff., but they are the only two
that seem disposed to make a real transition
of a few inches: never observed this with
2 & 3. The young leaves of all of them 1. 2. 3
& 4 are filamentous, but old leaves are
disposed to throw off the threads but es-
pecially so in 2 — next in 3. № 1 has
the finest threads & with greater disposition
to curl. № 4 the coarsest. № 2 the
scantiest (?) but you will always find a
plenty of filaments on the young
leaves of all! The smoothest leaf is
in № 1 & № 2. № 2 you can al-
ways distinguish by in doubt by the stron-

Plants of № 2 differing when in (?)

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

sharp spine hard to bend a break! not so with nº 3 — can't stand the contumer pressure of finger even on old leaves. I send also seed, flowers & ripe capsules of nº 1 (marked 1), also a few ripe caps with seed of nº 2 from Hillcrest; with flowers '72 & cap of last year — ~~all~~ last of these you will get! also seed & cap of nº 3 wh are not as mature as I cd have wished — As the worms were eating them up & they were commencing to dry on the rock — rains also agitating I thought it best to pluck them & save what seed I cd. I send half, balance I reserve in case the package fails to reach you. Same with nº 1. but no more of nº 2 at all! Also stalk of nº 3 showing the clothing of same with a longer leaf up to the panicle. This con-dition is most marked when the plant is about 3—4 feet high & before blooming. Now to look at the stalks of 1. 2. & 3 one might see but little difference. but 3 is the only one that continues a good long leaf up to the panicle — the others (1 & 2) have a most shortened leaf as you go up the scape. I refer of course only to good specimens of each plant — those are stunted & inferior ones of 3, wh do not show this condition particularly save when young. Also fruit of Asclep. Pamphreuda & A. Obtusifol wh I believe you will get — & ripe seed of Bletia tetrylla*. nº 3 as before stated has the largest fruit of all & is ~~not~~ greatly eaten by all kinds of insects — nº 1 the densest of all — nº 2 next. I cd pick out a stalk under 4 feet also.

* also Physostegia Virginiana on Pine-lands with fruity pods.

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

I sent a letter last mail as a kind of 1a
of resumé of what I had to say as
to writing of Y. f. & Y. al, & was in
a high fever, really & truly that my
next Examination of Y. al must give
me plenty of worms now quite red like
like Y. f. & still more advanced than those
found in body & fruit from Hilton Head.
2 of wh I sent you in a phial fixed up
in cork! But alas," Fair-haired half
sister to Flay" will no more do here in
looking after Mother Nature than it will
any where else! Patience - repeated in vt.
- typo tries & an utter disregard of all pre-
- conceived ideas & theories - These are the
qualities to help us along! Yesterday when
I came home from Sav. River. two days
I met in my piazza 4 or 5 splendid heads
of Y. al literally crammed with fruit - fruit
of all sizes & shapes but most of them
long & perfectly formed! Some set at
them. I sliced & cut up at least one
half with care & patience, but utterly
failed to find worms such as I discovered
in the H Hd. Y. al & 2 of wh I sent you
with 2 also Y. fil! Not one, tho I sought
them like Xtians - carefully & with tears.
On most of these fruits of Y. al I did
not even find a puncture - nor an
abrasion & the cells of seed were as
regular as the cells of a honeycomb -
Every seed in its place & intact, not
one a prey to a worm - the pulp
too, white, & perfect & uncontaminated
not the trace of the reddish - greenish
bilious lava of Y. f (& also of Y. &
al of H Hd!

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

And yet if I in one case found the worm of Y.f in the cap of Y. al surely I had a right to expect him again & there was cause to draw the inference I did. many of them Y. al. cap. had numbers of worms in them but a little way in the pulp & eating that, of this size & shape ◉. Very small head & white — differ entirely from the Seedeater sent you. no worms had bored out in them, for nothing had been eaten & the fretting of the rind in some cases wh I observed was done by some insect or bird (!) trying to get at the little white worms in the pulp. So I am at fault, as I can't explain to make out a strong case as to the worm of Y.f & Y al being identical, & if in the one case I can trace him from a puncture on the rind leading to the seed wh he was eating I might trace him perhaps in the other, & if so the egg (way) (air) of the piercing of the tender seed vessel in each case & not through the stigmatic tube & that (wh) the moth may not have impregnated at all but some other. I wish you could (have) examine microscopically the very young capsules of Y.f & learn whether the rind was punctured & the egg laid in that way & not the other. How do you account for the fact that some Capsules are perfect & are not bored by any worm getting out? If the moth impregnates (with pollen) & then ~~to~~ deposits her egg — Every capsule ought to have a worm wh eventually must bore out! I shall continue cutting up Y. al in hopes still of finding the worm of Y.f.(?) again.

GEORGE ENGELMANN PAPERS
MISSOURI BOTANICAL GARDEN

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

What think you I saw yesterday - growing at an old Pima-Indian settlement, chiefly the resort of Officers from the rio-Gila & Sav. Riv? what else but an Arborescent Cactus some six feet high! — 2 or 3 feet of the trunk a base was white & roughened like that of an old Glen Cafgenda — above that covered with spines ✳, & then above the greener - branching joints &c.. with fruit on the end. The old Indian whom I questioned, said it had been there — planted by his sister — "some 15 or 20 year"! & had never flowered till this summer — finished in pencil & understood her to say & very beautiful. I brought a joint home with fruit & planted it.

Remarks Aug 20 '62

Some not intents
In open air of very truly yrs
course. A Gray

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN HERBARIUM

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

15 aug

Have no fruit I Father to Does. Sun it wide in a daisies My Jam Still Relation pure Ill in a stop to be write Sad que. No 4 — have received

yr kartz 9 aug

red — but no

package — I will wait for next mail to see Capsules — hope to get them then & will reply. I am surprised as to the package of T. Ell — did you pay letter postage? Jennie! I observed that some one had sent you cacti from Switz in paper you sent me, & his name was on the pack — thought it a good plan & helped its coming — will give no more the ones eventually I think will burst. will see about mistletoes

E Hale

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

no fruit on "accrat Wreemfir—"
Blufftown FC 9 Rec Aug 23
19. aug '72 Ans 30
(seeds are Asimina Parviflora.)
To W. J. Engelmann

My D^r,

In my last of 16 aug with package of leaves & seeds I stated that I had just recd yours of 9. aug but as your capsules had not come I wd wait & see what they said!

They have now come, & I have examined them as well as I am able to do — comparing them with my 1. 2 & 3. Your small constrict capsule with two latex to be Y. flamentosa reminds me much of my № 1 & also № 4; — my № 1 however is still smaller & smoother, & the reticulation (?) on the surface much finer, or rather I shd say obscurer than your Y.f. The capsule of № 1 seems to be more papery & delicate than all others with Give seen. The absence of the secondary dissepiments in 1 & 4, & also, from (Y.f.) is certainly a remarkable coincidence, & if the marking of the seed in all is the same (under the microscope) I may often will be compelled to yield as to 1 & 4, tho' the rough shrunken shaked leaves of the one with its coarse fibrous — seem so

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

distinct from the smooth narrower leaves with abundant & fine curling threads of the other! As for your "Large straight capsule" (*A. flac*) I have as yet met with nothing like it, tho' it evidently runs more towards my No 2 than any other — as indicated by the well marked reticulation, as well as the presence of the sec. dissep^ts. The Seaford capsules of No 2 may approach it more closely — leaves I imagine similar also. As for *A. tuberculata* it is the most curious of all in the deep sulcus over the false dissep^t making almost 6 perfect lobes instead of 3. And yet after all is not this my No 3, in wh the f. dissepiments are always perfect(?) — wh also is most markedly tuberculate! Did you observe this in the panels sent you? True, my specimens of Cap of No 3 of this year are differently shaped, but did not last year's wh I sent you afterwards prove your *A. P.*? Is the scape of *A. P.* long leaved to the Panicles like my No 3? Possibly differences in soil may affect for some of these changes; our lands about here for the most part very sandy & worn out, & will not even grow good S. itself unless helped by plenty of manure - mud & compost, — wh by the bye they never get now — Cuffee Corporation being as yet unwilling!

* At least so far as my experience goes!

(But what will the seed of you Y. P. 91A
say under the microscope? I do not
know as yet how much their character
ters are worth, but I am disposed to
place much faith in them, — don't think
they will lie! ——————————

I must repeat that I have only
been able to get a few capsules of
No 2 from 14 ft. & these when
handed to me by my gardener patient
were slippery & mouldy. But I did
do — these altho' the blooms
were cut down by negroes. Then I
sent you before were ripe & plucked by myself
— most or quite mature — some good
seed in them I don't not! As for
No 3, all are from a batch of
plants, some 15 having flowered together
but the worms & insects have played
"the Old Harry" with them, so
much so I thought it best to pluck
them before being quite mature. Some
of the seed however is I think good!
I have sent an abundance of capsules
seed of No 1. many
loved, — seed imperfect Therefore? (!)
Of these last I still have a plenty.
You have now 5 or 6 of No 1 for all
Examinations, so you must con-
-tent yourself with what I send of No 2
& 3 & also of last year. If my
Father succeeds in getting No 4 from
his German friends in the sand hills

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

I'll send you. I intend to ask him to try
& impregnate Y. floridana when it blooms on
the lawn near him, — this Experiment will
be worth something — also ask him to look out
for the moth &c. As before stated you
can rely on the whole plants of 1. 2. & 3 sent as
Similar good Specs — representatives — save that
the leaves of that of No 2 are rather longer
than I have ever seen them. I regret I
cannot serve you with greater accuracy
in sending fruit from many places, [redacted]
[redacted] I am
compelled to await my chances for getting
anything as I may happen to visit a
place when sent for. But I have seen
very many plants of No 2, — 10 & 20 miles
apart — always same Except that in one or
two instances I've observed a shorter leaf.
Spine always strong & base of leaf always
much attenuated. This is [redacted] always
the case.
Nothing more as yet
to say of moth of Y. al. can't find any more
of reddish — green bellied larvæ. But the nest of
some fruits full of the little white worm —
with as yet no legs. I wonder what
he's growing — will he get over into the
other? Send by this mail packet of No 1
& No 3 (last) also one & two of fruit
of Y. al for you to Examine the
Pulp worm — also spec. of Mistletoe
from a young persimmon (Diospyros) about
6 feet high. Plant for as I have as yet
observed, the [redacted]-strings from the young
limbs of a tree about 3 inch in circum — or
rather they are now growing on such — of course much
smaller when the seed "stuck". Mistletoe seem [redacted] on
Quercus Laurifolia a tree of rather smooth & an oblong

Leaving Palm Valley. Live Oak Tree with Spanish Moss

Yesterday morning the 9th

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Reading 23 1872 92a

1/ The package sent contains seeds &c of № 1 in the "Saturday Review", seeds &c of № 3 in brown paper. Scapes &c of young & rather stunted plant of № 3 - showing the very young buds enclosed in the imbricated scape leaves; - far from being a vigorous plant. Longish capsule of I believe № 3 from "[redacted] 7th" of last year, with [redacted] compare with yr Y.P. I strongly suspect this last & my № 3 to be identical: you will tell me what the seeds say. Also the original Y. al. young "banana" from wh my drawing was taken of the half formed worms (?) showing the excavation in the seed-lines from wh I took them. These were I think have run into the reddish, - green bel

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN Fund



larva sent you in phial. The little bits of tissue paper contain these dried specimens, — Don't you call them now Yucca seeds ? I had intended to mature — the others being imperfect ! — for I could hardly stand that !! Also another, softer & sweeter spec^n. of Y. al. fruit already split, with a worm within, which seems to be developing, — maybe into the other. Didn't extricate him from his pit where he was busy head foremost eating a digging, — fearing to hurt him ! Please examine him. The egg of these things must have been deposited right in & among the seed, ~~early~~ ~~set~~. But on the other hand I have a splendid head of Y. al fruit with long symetrical pendulous fruit (some 30 or more) with perfect intact seed & no mark of insect within or without on most or all. Who can read these things?

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Rec'd Aug 27
" Sept 30

Bluffton O 10

20 Aug '72

Dear Engelmann —

Your kind favors of the 11th & 15th inst. are both before me, & I am pleased to learn that you are both well. Even at the risk of being considered tedious & repetitious, I will write you a few lines more, as I have several things to communicate which I think will be of interest to you. Since writing you my last letter I have had a very severe attack of fever & ague, which has prostrated me very much, & from which I am only now recovering. I have been unable to do anything for the last two weeks, & have had no appetite whatever. I have been losing flesh very rapidly, & am now very much reduced in consequence. I have been taking quinine & whiskey freely, & hope soon to be entirely free from the disease. I have had no chills for the last week, but am very weak & debilitated. I have been unable to write you sooner, as I have been too sick to attend to anything. I have had no appetite for anything, & have had to live entirely on milk & eggs. I am now beginning to eat a little meat, & hope soon to be entirely well again. I have had no chills for the last week, but am very weak & debilitated. I have been unable to write you sooner, as I have been too sick to attend to anything. I have had no appetite for anything, & have had to live entirely on milk & eggs. I am now beginning to eat a little meat, & hope soon to be entirely well again.

Do I intend this Bluffton letter as a pun, as my letters of late have been in the habit of containing? Well, I do not intend it as a pun, but it seems to me that the Indian Seam No. 11 & 15 — becomes the right Comet to wherein no man can work "!

In a former letter I stated that I believed the Seed Eating larva found in Y. al. was identical with the Seed Eater of Y. fil, & had much to do in connection with the matters appertaining thereto, such as the fecundating matter, viscous & the possibility of her ovipositor being thrust thro' the tender capsule either of Y. fil or Y. al, & thereby the possibility of the impregnation occurring by some other agent! At the same time I sent you in another letter a little phial containing



4 larvæ – Those two below being from
Y. al. – Those two above from Y. bil.
(No 3) I must now leave off & have my dinner before
them. In my next letter my
high tone was considerably lowered,
because, altho' I cut up a great
many "bananas" & various shapes
& sizes I could not find any
others! In all I believe I ~~found~~
found some 4 ~~dozen~~. I remarked
also that a great many larvæ
were to be found in the pulp –
& most smaller size ◎, – Very
white, & fat, & without legs – alto-
gether differ from the reddish
coloured green bellied ones which were
eating seed. Now since my last
letter I have cut up & sliced
a good many others & to my great
delight succeeded once again in
"striking ile"! – ~~but only once~~
or rather twice – a worm in each
fruit. I sent them to you by
this mail so that you may
see the kind of execution they
are capable of doing in those
very hard black seeds. The two
large & greenest worms (for they
have now assumed a greenish
colour about the head & back &
that peculiar colour which in dying
one will see in the trembling glider

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

y an oed hags a casper Canoe
-stick — [redacted] ! I am
thus particular as the colour is
peculiar.) I say the 2 large ones
are from the [redacted] fruit sent
— the others like little ones, y
fat are there (very difft) with
eat pulp & not seed ! & which
are to be found abundantly in
most "Savanas" ! . You will see
now the reputation my smallest
seed set have here now assumed
& I am more than ever assured
of Y.f. & M.al being one & the
same ! Same colour, — same
no — (6) rings, — same no — & time
set, & other rudimentary (?)
When I found these fellows they
were in a sorry plight — "water
— water everywhere — yet not
a drop to drink," — simply
because they could not drink !
In the "Slough of Despair" were
they ! — sunk deep in mud —
so tenacious & gummy that
they could not move & evidently
they had given themselves up
to die, when I released them ;
but they were very sluggish & cld
hardly move — indeed at last
I gathered when I touched them

MISSOURI BOTANICAT GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

10 & on alcohol for preservation! Doubtless as long as the fruit is on the twig, they do have eaten, everything being kept & juicy, but not so after the partial drying of the cap.

But strange that I find so few! & in some fruits. long & symetrical I can find no trace of puncture, abrasion or gnawing — either a without.

Is it that the mother bug — -nuba is tempted by the similarity of the flowers of y al to y. f. to deposit her eggs only in a few instances? But I will try & further & dissect them in another season. Long note this in the pocket-diary. So as to accompany the. Pic keep wh I wish you to see at once. my pen tw is most wretched.

Sent package of cones mail.

Yours truly

21. Aug.

Rec'd y2 long & most interesting letter — many thanks! will answer at the right time. Stamps Yes? I devote them to the work of Yon Tinné as well as I may!

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Rec^d Aug 31 1872
Ans Sept 30

Bluffton Mo
26. aug '72

To Dr. G. Engelmann -

My dear Sir -

(Jons) As stated in my last, of 11 aug had come to hand, — and now another of 19 aug with its rich cargo of Insect food! How can and very good I can have my heart thanks! — Now let me say I must thus persuade[s] me to" — believe in Promethea, which I shall do when I see the larva issue again into the moth, & when I feel better satisfied that these punctures on the surface & these tracks through the pulp of Y. al. are made by some insect wh has no connection whatever with the reddish col^d larva that eats seeds! There is then no doubt that the moth crams in the pollen because it has been seen to do so, & therefore an agent, or one of the

agents in impregnation, but it is not yet proven that the larva is from the egg of the said moth, or that in egg shape it was not deposited within by some insect who pierced the capsule from without! How mark you! I am almost sure that the larva will turn out to come from the moth, ^ that the punctures on the surface of the fruit ripe. may have nothing to do with said larva, or said moth, still, what I observed is worth looking after. For in one or two instances I did trace the larva step by step, or rather slice by slice, from the minute puncture on the rind through the white pulp — immediately to the seed in wh he was tunnelling away. On the other hand ^ In examining the surface of the capsules of Y. fil I could see no mark of puncture ~~x x x~~ (I mean punctures from without for the purpose of introducing the Dipteron) ^ now again after examining a large number (I find ~~x x x~~ some) of Y. al ^ having no punctures at all, ^ no worms of any kind, either in pulp or seed! — others with only the little pulp larvae (Cynips) in great abundance; — a great many with punctures (nay most of them), and which punctures after being carefully followed

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

slice by slice, with the Expectation on my part of unearthing a tunnelling larva in the Seed, — and in, — Nothing! neither egg nor larva! I follow them ~~generally~~ generally to the central line of the fruit, & this in repeated instances. After getting to this centre you still observe the little green spot — cut a thin slice still deeper & you've lost all sight of it forever! There is no doubt that this puncture is the work of some insect when the Cap is very tender & green, but whether it has any connection (as I at first supposed) with the larvæ seed-eaters — is more than I can say at present. In my Last two instances when I "struck" the larvæ eating in the seed, — (or rather half-dead, swathed in their gummy débris as I wrote you —!) I did not trace them by any punctures from without — I came upon them unawares. — So that you see my chain of connection between the puncture & the addled larvæ is broken, & I may not mend it!! — Now what does this prove! It proves that I may have erred in my Supposition that the larva seed eater came from without, & not thro' the stigmatic tube, & that in those instances where the mid-punctures I came upon the seed-eaters — it was simply accidental, — that is, the larvæ were



11½ placed in the seed originally, thro' the stigmatic tube, & this puncture from without by some other perhaps quite diffr. insect — from the moth — only happened to strike down upon the spot — where the seed eaters were busy at work! I mentioned to you one case where the larva seemed to have hatched first without the seed to wh he had made his way. It is possible he had been originally in the seed, & by way of diversion had tried the pulp for a while; — but when found he was in the seed! ——

You refer to my contradictions — one letter stating that I was not able to trace the tunnelling worm to an outward connection, & another, that I had done so by following the "gremist a bremist mark" from the puncture to the worm, & you ask how do they "harmonize". What I've written explains themselves that I've seen with these conditions. I enjoy this advantage that writing only in the span of the moment, & from what I do see, I am enabled to correct my hasty conclusions next mail or two, — whereas, the great Mr Darwin — whom most unships, but whom I'm disposed to look upon by the lye as the most inconclusive of all writers (I'm not a HUM!) has to wait for succeeding editions to correct his mis-statements & inconsistencies! I wonder where he'll be 50 yrs hence? — I wonder! — perhaps quite forgotten. "Our little systems have their day, — They have their day, and are no more"!!

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

(2) I hear Ave' Aug 31 you say "Please keep to the matter in hand, & be so long as not to fly off at a tangent!" — Bien! 112a

But after all — as you see, I still feel uncertain as to these things — Nature requires patient watching, — her secrets not to be revealed in one day or two, & many investigations are necessary to verify any one fact. For my part I do not at all doubt that the larva of Y. b. & Y. tel are the same, — the great thing is to be satisfied that said larv come from the moths.

Yesterday a negro brought me a head of Y. tel. with fruit, — they were small — inferior & tinged. I cut up 2/3 one. I found only 2 or 3 pulp worms, & not a single larva secured, — So that I am as after re-peated Examinations I've yet come upon not one. 6 — (possibly 8) reddish colored larvæ! Query! for there is no end to the wonders of nature & that Everlasting battle wh is being waged as furiously among the "small infantry" of creeping creatures, as that (alas! alas) wh was waged between Germans & Frenchmen!! — Query! may not in all instances the eggs of Prionus be deposited

MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN

0 1 2 3 4 5 6 7 8 9 10 cm
copyright reserved
MISSOURI BOTANICAL GARDEN

∧ some keen seeded enemy — some
diheatly minded 199 - Sweden - gently
probe each tender capsule for ?
his daily food! Hence the repeated indications of Punctures
my yard all over with keen eyed
∧ beg visits for hidden gold & silver,
— the crow (bit crow) & the raccoon
dig at the eggs of the Salt water
amphibian on the beach! — Why not
the same process go on in Yucca?
It won't do to pull out a bow at ev
Ventures as that will it? — facts —
facts we want! As regards
those ants, — do you know I
have selected myself whether our Y. f.
larva would not always remain within
his capsule (as I did find two
somewhat webbed up in one) ∧ whether
it may be that did the boring out,
or — the ants boring in after him?
But you saying that they bored
through the green capsule ∧ enter
the later marriage — turtle as if
they must come out any how! —
I cannot answer that question
as to how many seed of each kind
(Y. f. a Y. al) will a worm require for
his development, & shall endeavour
to watch Y. f. to verify that "hold".
I thought of yours as to analogy notion
of the late bloomers! unfortunately
the plants are not very near me

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

I must depend on my chance visits 11/29
in a measure when sent for! Unfor-
-tunate!! I have no Capsules from
States Fl. a Fl. Matter, either of Cat-
a this, - but have written urgently to
both places. It is hard to interest
persons unless in such matters, but
I know my Father will get them for me
if he can. I'm getting to think it's a
pretty hard matter to "locate" Yucca -!
illusory, - elusory, - Evanishing Yucca!
But, if I can't describe the variations
in bark love - I can walk in a field
& pick 'em out at a glance! - I can
do that if nothing else!

I agree & heartily to N. 1. 2. 3 & 4,
but I think it likely "flaccida" will come
under "baileyi." Your "Y. rupi" under "Y. Brac"!
What say you! never in all my wanderings
saw a Yucca fil trunks like the one
figured, - never saw the faintest effort to
push out shoots & branch! Something
wonderful to me. Reminds me of a
shrubby "glauca". The only 2 that pretend
to make a trunk of a few inches
are 1 & 4, & always removed by Sudden-
-ness caused - in no other way -!
Examined for this at Fl. Matter & here.
And are the Seed mandamus going
to fail us too? - my last hope!
Mrs Riley's figures of Brevifolia are
are beautiful! - you certainly
are "fast" people out there, &

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

& up to time! They seem to me to be wonderfully accurate. I am going to send them to my Father, having asked him to try his hand at the pecans. If so — it may bloom this Y. I suppose some 25 or 50 bloomed there last Y. but no fruit!

I am much indebted to you for Y. kindness in sending them things to me, & now Myles &. I don't think I shall bother you with another letter until I've got some fact or other to present you with for I can't inflict mindy talks on you any more. Yours ever C.N.Bs.

Bye the bye had a very curious dream in connection with yourself — doubtless due to my having the day before hurled down a P. Ell cure of peculiar form to send you! I dreamed I received a large package from you this the mail, containing immense cones with immensely long leaves — with this note, "You boast much of your long leaved australis & the Swansons of mates, but here is one which outdoes anything you can bring. It is from Nootka sound, — called the Nootka Pine! — please observe the 10 bellows in each sheath, which appear in last yr's growth as well as this!" I asked myself what "bellows" meant, & concluded that was a new name for leaf! Can't you send me a specimen & make me a believer in dreams? But after all this may be our Realest life as it is sometimes our best!

"We are such stuff as dreams are made of"

P.S. The Arch of the tunnelled seeds sent (y. al) has to be broken in (cut) so as to extricate the prisoner!

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

P.S — Ans Aug 31 1872 2 days — 3 113a

I neglected to say that if anything interesting occurred entomologically I wd endeavour to oblige Mr Riley — & indeed I may say now that that for 2 or 3 yrs past I have observed with some interest a certain ash-col.d villainous looking insect wh devours in a very short space of time shoots of Ilex ambigua & I. Cassena (yaupon). It is singularly voracious & restless. I might amuse you ~~by~~ wh I to tell you how my attention was first attracted to this "Wry-necked beast"! Happening to pass through a clump of Cassenas, I stopped for a few minutes & was attracted by a peculiar sound, like a continuous dropping upon dry leaves! Supposing it to be drizzling — I looked up at the sky, but the sky was cloudless, — considerably puzzled I did not discover the cause until I observed the Cassenas covered by innumerable insects — wh were either eating, — moving, or flying in every direction, & it was the chipping of the leaves & their incessant Excre — mental dropping ~~from them~~ wh caused this peculiar sound. I have never seen them upon I. Opaca — a Dahoon, — only on the above. The curculio (?) also wh sometimes almost every acorn of Q. Virens, or another wh performs the same office for the long seeds of the Cabbage Palmetto (Sabal. Palmetto) may also be of int. The Nephila Plumipes also whose silk was to have been wound by the deft fingers of the* Dudley daughters of the S. isl.d — thereby superseding S. isld Cotton — 16

* see old Nos of Atlantic monthly by the dis — coverer Lt Wilder! —

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

11/36 to be found here! their amber col^d webs stretching
from pine to pine! No danger must^d of my
attention being distracted from my more legiti-
-mate duties of Plants to a study, for wh I
have but little taste or inclination, — nor in-
-deed time; — besides, there's the risk of a man's
running into the condition wth physical &
mental of the "Scarabee" so genially
& humourously described by that Master W^m
Oliver Wendell Holmes in his "Poet at the
Breakfast-Table"! Such a beetle like condition
w^d hardly be pleasant! — and that re-
-minds me that in the last N^o of Atlantic
monthly for September there is also another
piece in quite a different style — on a
subject kindred to his both, viz, "Aspects
of Pines" by Mr Hayne, who, I'm glad &
proud to say is a Charleston man! Now you
are studying Pines from "Nootka sound" (sitka?)
to Van Diemans, & not the faintest variation of
leaf or cone or bark escapes y^r Eye, ~~not~~ this
is the mere material form & outer husk of
things, — but if you need catch that more
subtle essence or spirit born of form & colour wh
pervades a Solemn Pine-forest — I pray you
most humbly to look at this picture from the
hand of a Southron, — native, & to the manner
born! your correspondent — who standing on his
own heather claims to look at all such "aspects"
with open eyes — indorses the Vales as the in-
-terpreter of his own woods & forests! Am I out-
-lawed & impudent — or only tiresome?

When may I look for Pines Nootkiana
a shall I say P. Greenfort — ? ——

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Must you've by this time rec'd my full grown
larva of Y. al. (in pupa) & also the cocoon=
=nellings of same! Blessings to
you, my dear Engelmann 29 Aug '72 12
Rec'd Sept 3d
Ans. Sept 30

I had hoped to give you
a long chatting spell but as
I now have a "fact" tho' a
small one — I prefer to give
it now. Last year I thought
that Y. flonida bloomed only
in the fall — 1st because
I saw them several instances,
2d because what I saw
corresponded with the state-
-ments of those who ought
be relied on. What was my
surprise therefore (& I may
say disappointment at an after-
-time visit) upon visiting
my patch of No 3 to find that
a plant of Y. flo * some few
yards off had already bloomed
& from the dried appearance of
the stalk & the condition of the



12th Harvey — Evidently in July or perhaps when No 3 was in bloom. Trunk 8–12 inches & stalk & some four feet — fencing like those I hejmed for me last fall. It must have flowered abundantly but of course no fruit! What an important lost of trying hard at the ingress of the Vis — & most likely it was in bloom when Examining No 3. wh was full of Pennata, why cud they not have bulletted the same Woo for Y. S? This plant Y.S. was the one from wh yours came wh I sent you. When I last Examined this plant — it was in May I think — Earlier or later, but no Signs then at all of putting forth. By this mail I send a leaf & flrs from Same, but doubt you can make anything of the last. — also seed & cap. of No 4 from Ft Smith just as my Father sent them when letter I enclose. ~~Of course~~ as it will set on the table of writing & will Explain better. Of course all the cap. are of No 4, & my Father is mistaken, by far the greater part of the plants on his farm & wh bloomed last Y. are Y. Stor, only a few Y. Drac (al). Doubtless his Parish duties have prevented his giving attention to these things. When you read his note please Return — as returned as you please. My Eng article on Cyp.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Dear P. Australis with
you before Christmas
it. Stamps that I got
can find no cases
I think Spring. I can-
I must wait
it — for, I think
Thursday
Give
I all
& Triandra
not
to find
with

annual Journal

Engelmann

am I cannot
sizes & cases.
Thus
even
bear
one
Thus

Bulletin

Yours
does
expect
Thus

capsules

Yours
many
with

Sept. 1st

Yours
many
Thus
I find
Thus

Sept. 2

Yours
many
Thus
I can
(as

Received specimens of Yucca
from Mr. Hall (Canadian Pacific R'y)

I sent Mr. Hall (1st year of) Yucca
notes that he had

M. Alcipol all yuccas were
bored by the larva making
its Exit — under but a
few days since I read a
whole pamphlet of fruit &
I believe there was not a
single one un-bored. By
this mail I send 2 or 3
bananas" in bur original
Give stated — if you cut down
to the seed you will find these
tunnellings. I judge that from
10 to 14 seed generally are eaten
by each larv before he Escapes.
Evidently the moth performs
the same functions in some
instances for Y. fil. as in Y. filamentosa —
an abundance
I can
(as name applies next

MISSOURI BOTANICAL GARDEN

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

but perhaps not in all — possibly in only a few(?) As for the pulp mass — by examining my new soft capsules I find that it has made its entire (?) bond within apparently some tender ripened seed. After being enclosed the seed looks like a little soft pulpy bag. I have found a great many of them in these capsules with from previous examinations I knew to be full of pulp masses. I have not yet seen a Sanguisorba officinalis in bloom this fall — but my Father writes me that one is blooming now on the lawn near him. He will attempt the fecundation he says. With the Y. al sent I enclose also a cone & of P. Ell from a Sapling some 30 feet high.

Within this note } on wild fruit L. Calostoei (half opened) & a mutilated specimen of Habenaria Michxii which I dare say you have never seen — Curious to see these orchids growing in the dry sandy soil under scrub oaks & Pines, but there they have a watery tuber. In the small package of dried plants I suppose sending you will find a good specimen.

I dare say you've by this time received all of my packages (and then should with full grown leaves of Y. al.) & Cones &c this & receipt

C. H. Mann

This Young cone of P. Ell is concealed by the long leaves

Rec'd Dec 1 '72

Am 30 Nov

Bentham to

4. Oct 72

To

G. Engelmann

M.D.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

No flowers have blossomed about me this fall, but having within a few days had a few stalks of Tw reed from Hilton Head Beach I've thought it best to bundle them up to take the chance of Mo! A few flowers were received at the same time in a little bit of dirty paper — I enclose from the same stalk, which also I send. This was the offering of an old ante bellum Patient of mine, — a negro, — who made a faithful promise & — wonderful to relate — kept it!! — So you will value it accordingly!

In the same package also another cone of P. australis, & positively — if I'm not too much hurried with a certain tumultuous case a bulb of L. Catesbaei & tuber of Habenaria

I enjoy Engelmann's summer days — I wish I may have many such days in store for me — I have not seen a flower of P. australis this year. Certainly all the flowers have long since gone to seed.



Mexii — Trees of Bletia aphylla.
I enclose in this a few seeds of
Magnol. Tripetala, — a beautiful cone
of wh my Father sent me from
F.l Mortes. It was very fine, — smooth
& waxen in appearance, & the colour
rose-colour, or perhaps I might say
Lake or Carmine. I once saw this
tree in a primeval forest on a S. isld
but never the fruit. My Father writes
that the appearance of the tree with
its long leaves, *pike-like branches &
flaming cones — was something wonderful!
I beg of you to say if these seeds of
P. aus. did drop their leaves in the fall
of second year, but that many or most
carried them on to the 2d Summer
a Thousand? & possibly that is always
the case in the year when the cones
do not mature — as was the case
last year? — Now however, almost
every tree being full of cones now
maturing, I observe the leaves in-
-variably below the cones are turning
yellow & commencing to drop, — many
have dropped already?, & even on some trees
wh have no cones I observe the same.
Above the cones the leaves are still
green — possibly they may hold
on, till spring! The cones of
P. Elliottii are already & in many
trees open, & maseing quite a
show — those of P. aus. P. Tæd. & Mit
& P. flab. still green & tight. P. Serot yellowish
but will not open till between July & Oc '73.

* Very irregular — it is true, but Thursday



0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

GEORGE ENGELMANN PAPERS

Rec^d Nov 2^d
Ans 7 30
My 15 '72

Charleston SC
30. Oct. '72

15

I left word at Home t. send
you two packages, — one of Cotyledons of
P. Pub. — another of dried plants collected
from time t. time, — chiefly Orchids &c.
Doubtless you have read them. As for
yr two last letters they reached me in due
time, but I was then & have been for
some time in such distress & perplexity
on acct of the illness of my Brother-in-law, &
I unable to reach him on acct of cares
wh it seemed impossible to abandon (with
but little help near) & wh needed the most
exact & judicious attention! Was it not
hard — hard? — I was therefore
utterly unable to answer! When I did
reach St. Matthews, he was no more.
Time & space brings its' ameliorations
& alleviations & the "shock was fully rec'd" —
— he in his 74th year; but it seems now
as if this terrible gap can hardly be
filled again in our little Home circle,
& that Life can hardly again be quite the
same thing to us without the presence
& encouragement of this most genial — &
most blameless of all men. I long to
see him in my visit to him of last
winter — (the recollections of wh are now
to me among the most delightful memories
of the Past) — that he was "bound" to
set to 90, — at least 80, — so hale, so
so vigorous in mind & body was he!

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

for in his whole life hardly had he known the sting of pain, or sickness! He ~~Sm~~ smiled somewhat doubtfully at my prophecy, & seemed quite ready to take whatever the years had to bring — either Sun-shine or Storm, for there was not a trace of cant in his composition, & he always (there was) helped keenly to enjoy whatever, of Good or Pain — which (all) Life ever bring him! About, did he have that truest philosophy of extracting enjoyment from the little things of life! — of the Past he thought not, — to the future he looked only with hope, — the Present he enjoyed, heartily thanking God for many mercies.

So it not strange that I should be inviting thus to a stranger (?) — one whom I shall never see! & yet it is a down-right pleasure to talk of him & I feel as if I could proclaim his goodness & his virtues to the good, — the just, & the learned & Enlightened. I could have ~~invited~~ wished all good men to have known him & loved him! It was but a short time before his illness that he wrote me a delightful letter brimful of enthusiasm, & his genial — kindly humour, — telling me of a certain walk through the Autumn woods — to "the four rivulets in the Gorge", when he had made the to him wonderful discovery of a large & beautiful magnolia Umbrella — the beauty of wh seemed greatly to strikes him. The large leaves, — the rose-coloured cones, — the peculiar branches, on all of these he descanted, at the same time sending me through the mail a

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Cone most carefully wrapped & directed, — some
of the seed of which if I mistake not I
sent you when last at Home. After
his burial while on my way to the Depot
(never again expecting to return) I strolled
alone through those scenes he so loved, —
& struck the path which lead to "the four
rivulets in the gorge", & after a little search
there stood in its Autumn beauty the
tree of which he had so enthusiastically
written & whose measure that accurate
eye had so carefully taken! It seemed to
me near forty feet in height, its roots
nourished by the little stream, — its long
broad leaves just a little touched by the
mellowing season, but the ruddy-flaming
cones were already black with decay & falling
to the earth. But he was not there, —
he who was to have been my loving
guide to these glories of the woods!

I Esteemed myself so fortunate in
finding it but I was glad to hurry
away — overcome by my tender & delightful
recollections of the happiest days of my
life which I spent with him last
winter. And yet these things will be,
— must be! — but Sadly Ruthfully
the sons who have had such a
man for their Father! The M. Glauca
I found not very far from his door,
— the fl[owe]r stalks dried & withered & but
one weather beaten flower still clinging.
— no trace of any fruit & I know
not whether he Ever attempted

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

(5) The fecundation as he has termined! — he was very near, but his lips cried not answer any Queries I might propound him.

When I have time again I shall endeavour to answer yr letters, — before I came away I hunted for the Azalea Carolini & was unable to find it — I let more than seen it before. Be sure I shall do what you wish if I succeed in getting it. Pardon my B.S. what may seem to the circumstances seem so amiss in my letter — but some things make the whole world kin — no matter how separated by distance, or Thought, a custom, a race, or belief! Please destroy it at once & believe me Ys Ss

Very respectfully
Emily Dickinson

P.S — As near as I can recollect I sent you —

Habenaria. Michx
Lil. Catesbaei
Polygal. cym
Eryng. Virg
Scutellaria. Pilos?
Sagitt. michxii.
Sanacen. Var.
Sent. Maritim
Podostig. Pulv
Asclep. Obtusifol
" Verticill
Liatris odorat
" Squar?
Orchis cil?
" Blephariglot!
" Cristat?
Pogon. Ophioglot
Dilatris Tinct
Tofieldia. Pub.
Zigadn. glab.
Androm. axil.
Pyrol. mac.

Stilling — Sylvat
Gordon. Lasianth
Thea. Virg —
Bletia Aphylla (flrs dropped)
Dermodium —
Convolv. Sagittifol.
Cham. Hystrix
(Oplontia Vul. ——
3 small ones from Conf — a flr)
flrs of Y. Sp?
Job's tears. (?) (?)
Clemat. Virg —
Hypericum —
Angula Carol.
Stipa avenacea

& Cataclen of Panic — Pub. ?

(Straight)

MISSOURI BOTANICAL GARDEN
ENGELMANN PAPERS

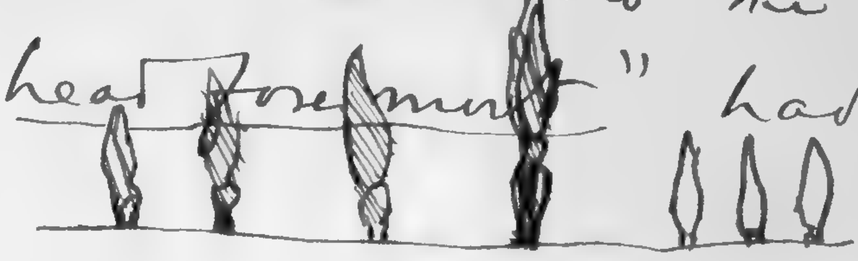
Rec'd Nov 20th
Ans — 30

Bluffton S.C.
13 Nov '72

Dr. Engelmann

My dear Sir.

Upon returning home I found that which I had packed of Cap. Carlton & Dr. Rubens had been sent, — that of dried plants still remained, I therefore mailed it a few days since, — tho' I fear it will be useless whether they possess any interest for you — as the specimens are common enough, — somewhat mutilated & all in confusion. I have since discovered a change in the Postage law, — I trust you will not have to pay the Excess on letter postage. I write now because I thought it possible that the time & mode of germination of the Pines had some interest for you. It is now some time since the seeds of Pinus Elliottii have been appearing by hundreds in the dried up ponds & old fields, & this was to be expected from their early maturing & dropping, — now of course P. Australis is showing up & also by hundreds in the sandy pine-land roads. Were you to take a walk in one of these old deserted roads un-

trod den for many a week you would
see the road curved into the seeds, as if
hundreds of little arms had been shot into the
sky & coming down "head foremost" had
so stuck in the earth  !
They seem to germinate very quickly, — more
so even than P. Ell; — in this (as I (P. Ell))
the wing of the seed is thrown al-
-most immediately as the seed germinates,
& when it pushes upwards out of the earth, the
blackish grey husk is seen, but not so
with P. Australis, — the wing seems to ad-
-here much longer, & indeed I conclude that
when the Cotyl. leaves expand the
husk still adhering — all com
I enclose different grades of the wing
to Examine. I enclose also one with
the Expanded cotyledon leaves as well as
two one just peeping, & all from the same
starting point as before alluded to. As for
the number of the Cotyl. leaves — they evidently
vary much; with P. Ell, — generally 7 — or 8,
— frequently 9, — occasionally 6 (never I believe
under that) 10) — once only I found 10.
Pretty much the same I imagine with P.
Australis but as they are just appearing
I have not made many Examinations, —
8 & 9 probably most usual. On my way
homeward I took Beaufort in my route
having business there — & having a leisure
hour I determined to visit the Red Ch-
-yard where grew those famous "pinckney
.. beans" of wh. I've often read, — They
had all disappeared save one clump

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

from wh I cut the enclosed spines. I saw no fruit. While on the Port Royal R.R. almost within sight of the Town where Elliott so long lived — we started a swamp of Nyssa, Taxodium, & Magnolia vd, and among them I saw towering up a very fine Pinus glabra, — its thick branches with dark green foliage contrasting finely with that of the surrounding trees, — and I wondered again how the botanists so long have confounded this peculiar tree with P. Mitis. Our route continued through shades of pond & wet ground where P. Serotina assumed a large size, — next a "good sprinkling" of P. Ell, — next P. Australis, & then a P. Mitis showing that we had come to clay! So Elliott had them all — Even on his own Port Royal! ——— I was also at "Stiles' Point" James Island for a short time, but for various reasons could make no Examination of the trees there. I was however told by my friends that they had carefully watched for flor but that no plant had fruited! They promise still to watch them. By this mail or the next I am myself sheet seeds of P. australis & P. Ellottii. You will find no difficulty in distinguishing both by size & colour, & by a peculiar dot on the exterior surface of seed of P. australis I should like you to plant a few of each so that you might see their germination. After a few seeds of Stillingia Sebifera collected on James Island when it is abundant & certainly

16th by this time acclimated. This plant was bought this last from China by the celebrated Jno. Laurens yr shr of Revolut. fame, — at least so his grand-daughter told me — a daughter of the historian David Ramsay — unless I am strangely mistaken. You ask about "mast" — "pine mast," — everybody here talks about "pine mast"! — is it provincial? Remember what Emerson in his charming "English traits" tells about the English woman on the Rhine saying to the people around her "Foreigners? it is you who are the foreigners here, we are English & Natives — Engrafted" or something to that effect. So if we in Carolina say "Pine-mast", — be it so "Pine-mast" it is, & must be — for all English speaking people, for are we not αυτοχθονες & the "last of Mankind" in the U.S. mere provincials??! Ah! my dear S. in our intense bigotry & provincialism we used to talk & feel so, but we are a sadder people now & possibly wiser, — only our wisdom has come too late! Mast is something to eat — that can be eaten & is (?) mast not better than acorns? Australians, eat pine mast — why not we? — try that y P. am. you'll find it good! I've tasted for Azol. Carolin — cannot find it here, — doubtless it might have been found in St. Matthews. & how gladly my Father would have led the way! for nothing — nor has the natural vigor of his body abated! His loving & youthful heart kept all the springs of life in motion — or a l'age de Ler. Could it never — never, as matters or many things in our life! Indeed

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Sent. Elliottii & Thea V.!

17

Rec'd Dec 17th Bloomington
Ans Jan 8. '73 12 Dec '72

Dr. G. Engelmann

My Dear Sir

Your welcome
letter of 30 Nov came in
due time & you have
my thanks! I thought
the former I obtained the
seeds of P. Ell the latter —
so having but little to do
to day for the sick I
sallied out into the ice
& the sleet — glad now to
get away from my light —
wood fire — so I fancied
myself a real Rose-man
for the time being meeting
with the frost demons" &c
&c!! Ah! you shd have
seen my trees in their
new garb, the shippened leaves

Sent you seeds of Cannas! — from my
fly — large — yellow (Dutch Bourse?) & small scarlet (Dutch?)

MISSOURI BOTANICAL GARDEN

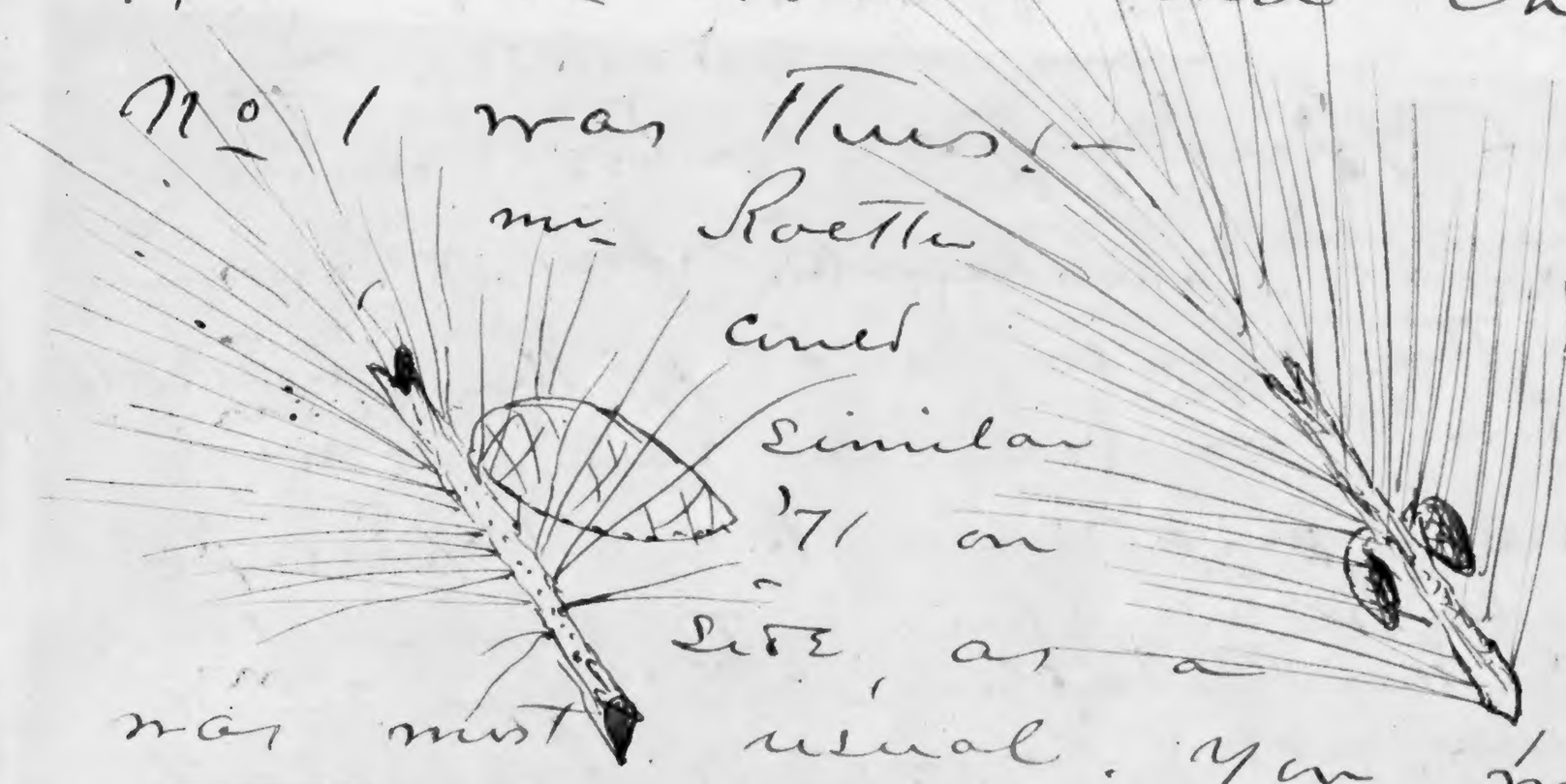


hardly bending in the blast!
— no soft summer gales now
blowing in their branches! So
you see Even we in Carolina
can have our winter too!

I succeeded in getting my
good opinion from a goodly tree
whose branches hung over a
creek; — I suspend this to
the more young & vigorous
trees (too much of the sapling!)
as I concluded you wd pre-
-fer an older & well grown
tree. ✠ Two packages were
thereupon mailed to Mr Paulus
Roetter (I had almost written
Paulus Potter — whose cows
in Every imaginable shape
& form — "down-sitting &
uprising" I never tired of
looking at some yrs ago — I
wonder if the said Paulus is
still drawing cows? — I think
I'd Even change my name
to Paulus — if that wd help

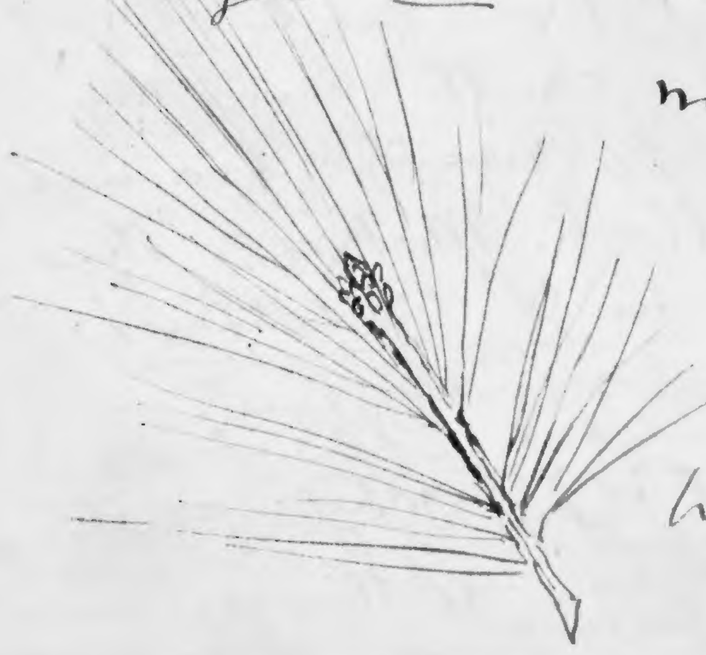
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

keeps me to sketch a good 17a
Cactus or a pine, — or a
nice milch cow!) — well!
after such a circumbendibus
I return & say that they were
mailed with also an Explana-
— tory letter & Even a rude
drawing of "how" they grew!
How Mr Roetter will chuckle!
No 1 was thus: —



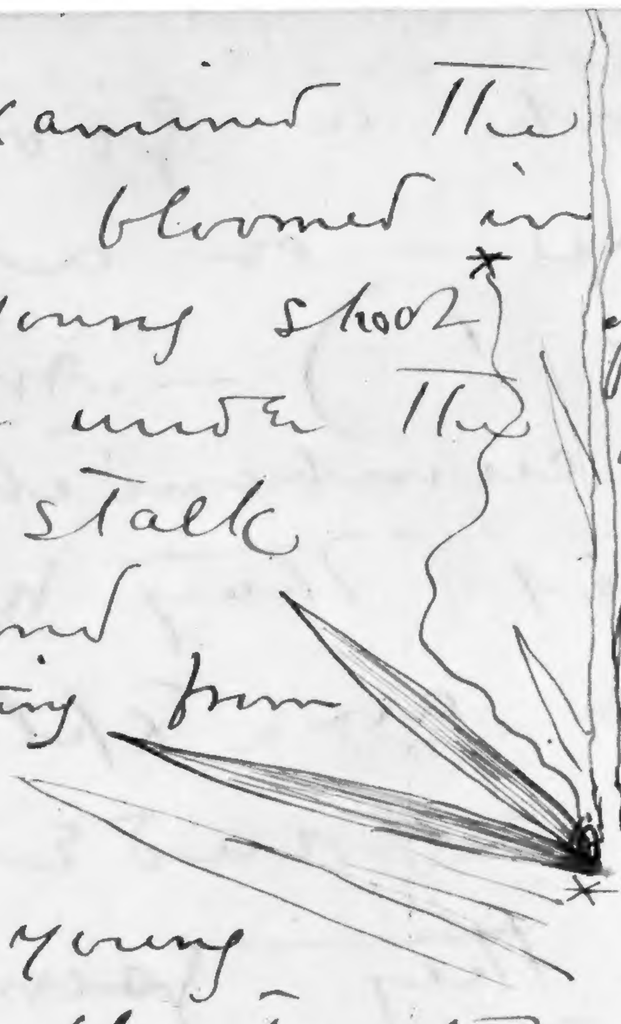
Mr Roetter
owed
similar
'71 or
'72, as a
rule must usual. You will see
that the leaves still cling below
the mature cone
The New Packages contained 2
Specs — one like the above without
the Open cone, & another showing
the pushing male ants — already
assuming their beautiful violet-
tinge — Thus. I packed them
without any twisting or
bending, protecting the
young cones & ants
with softest S-i-s-s & I
hope that he will receive
them safely. —

I wrote
that he
add a
cone of
the New
pair.



0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

17th I Examined the Wh blossomed in a young shoot first under the flr stalk & second counting from stalk the young



Yglossa plant the summer & stored about an inch first leaf from the dead . Between the first two pleats then — the base of the flr you will find shoot . Then are many plants 5 feet off & means, from the same subter - stem I conclude. So

our friend Yucca fil - gives more & more puzzling. Thanks for yr naming certain of the plants sent & the interesting information you give in various ways Wh I will not refer to at present. The " much more slen. with linear leaves is Lachnanthes Tinctoria - dont you see the reddish yellow roots? no root of Zygad sent. The long lil- leaf. belongs to Zygad unless I'm much mistaken, but I've almost forgotten what I mixed up. I did send Yucca Ilex aquifg I believe for I have spec. also Bongida. Carl also - or at any rate intended to do it. If my Chinese manipulated C. Hystrix does not suit you, I can send you the whole fam !! Had a terrible hunt after it in a swamp to obtain for flg for M. St Cairnes & succeeded in getting beautiful clusters of fruit - that was ere a year ago ! - but I went to work to into that swamp first now ! Foliage of Acorat X fil "quite distinct" from A. Tat. !! when or can't see it - are my Eyes ! Can't see it - not sufficiently trained I suppose. Globular tubes is Hal. Mich xii. The "small thing" with filiform leaves is L. Calesbaei. Bletia aphyll. grows in the rich moist woods about me. - really beautiful - flrs large. Many thanks L. St. for yr kind words - it is delightful even to think of another's thinking kindly & reverentially of the completest man I ever knew. The daily loss to me ! It was at this very time last year that I was so happy in his dear presence. Again thanks - many thanks. J Hall

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Package sent by this mail 172a.

containing

Tuber (globular) Hab. mich xii.

Bulb. Lil. Catesbæi -

Tubers of Bletia aphylla..

Seeds of Pinus Ell.

" " Austral.

" (White) Stillingia Sebifera

" (~~translucent~~) (wrinkled) Varnish tree (?) - not indig.

" Zigadenus glab.

Dec 12 '72

Steroulia platani folii Chin

" Agave Virginica - Capsules &c

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN



0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN